J Comp Physiol B (1991) 160:707-770

Journal of Comparative Physiology B Biochemical, Systemic, and Environmental Physiology
© Springer-Verlag 1991

General Index

to Volumes 151-160 (1983-1991)

Compiled by I. Thomas

Author Index 707
Subject Index 729

Indexed in *Current Contents*

J Comp Physiol B (1991) 160:707–728

Journal of Comparative Physiology B Biochemical, Systemic, and Environmental Physiology

© Springer-Verlag 1991

Author Index to Volumes 151–160 (1983–1991)

Up to and including Volume 153, parts A and B appeared together as one journal with parts A and B appearing alternately. Since Volume 154, the two parts have been published as two separate journals. Therefore, A and B were inserted after the volume number in Vols. 151–153. From Volume 154 onwards the author and subject index refers exclusively to the *Journal of Comparative Physiology B: Biochemical, Systemic, and Environmental Physiology*.

A

Abdo NM, see AL-Sadoon MK

Acierno R, Agnisola C, Venzi R, Tota B (1990) Performance of the isolated and perfused working heart of the teleost *Conger conger*: study of the inotropic effect of prostacyclin 160:365

Ackerman RA, see Kam Y-C

Ackermann RA, see Lillywhite HB, et al

Ackerman RA, see Whittow GC, et al

Adam L-J (1983) Hind femora influence directionality of the locust ear. A possible physical solution for front/rear ambiguity (A) 152:509

Adamson TP, Hempleman SC, Burger RE (1989) Modulation of duck intrapulmonary chemoreceptor discharge by cardiac activity 159:597

Addink ADF, see Waversveld J van, et al

Addy JF, see Pieper DR, et al

Adelung D, see Culik B, et al

Agapito MT, see Rodriguez-Cabello JC, et al

Agapito MT, see Sigüenza AF, et al

Agnisola C, Cariello L, De Santis A, Miralto A, Tota B (1989) Chronotropic and inotropic effects of atrial peptides on the isolated systemic heart of *Octopus vulgaris* 158:637

Agnisola C, see Acierno R, et al

Aguenaou H, Boeuf G, Colin DA (1989) Na^+ uptake through the brush border membranes of intestine from fresh water and sea-water adapted trout (*Salmo gairdneri*, R.) 159:275

Ahearn GA, Grover ML, Dunn RE (1986) Effects of Na^+, H^+, and Cl^- on alanine transport by lobster hepatopancreatic brush border membrane vesicles 156:537

Ahearn GA, see Ferraris RP

Ahlquist DA, Nelson RA, Steiger DL, Jones JD, Ellefson RD (1984) Glycerol metabolism in the hibernating black bear 155:75

Aida K, see Suzuki Y, et al

Aigaki T, Osanai M (1985) Arginase activity in the silkworm, *Bombyx mori*: developmental profiles, tissue distribution and physiological role 155:653

Airoldi LPS, see Lima AAB, et al

Akster HA, Granzier HLM, ter Keurs HEDJ (1985) A comparison of quantitative ultrastructural and contractile characteristics of muscle fibre types of the perch, *Perca fluviatilis* L. 155:685

Albers C, see Wurm TH

Albus H, see Groot JA, et al

Alestrøm P, see Rokkones E, et al

Allen PS, see McArthur MD, et al

AL-Sadoon MK, Abdo NM (1989) Temperature effects on oxygen consumption of two nocturnal geckos, *Ptyodactylus hasselquistii* (Donndorff) and *Bunopus tuberculatus* (Blanford) (Reptilia: Gekkonidae) in Saudi Arabia 159:1

Altringham JD, Johnston IA (1986) Evolutionary adaptation to temperature in fish muscle cross bridge mechanisms: tension and ATP turnover 156:819

Ananthanarayanan VS, see Hew CL, et al

Anctil M (1987) Bioactivity of FMRFamide and related peptides on a contractile system of the coelenterate *Renilla köllikeri* 157:31

Anctil M (1989) Modulation of a rhythmic activity by serotonin via cyclic AMP in the coelenterate *Renilla köllikeri* 159:491

Andersen NA, see Jensen FB, et al

Andersen Ø, Steen JB (1986) Water economy in bird nests 156:823

Anderson JF, Prestwich KN (1985) The physiology of exercise at and above maximal aerobic capacity in a theraphosid (tarantula) spider, *Brachypelma smithi* (F.O. Pickard-Cambridge) 155:529

Anderson PAV (1984) The electrophysiology of single smooth muscle cells isolated from the ctenophore *Mnemiopsis* 154:257

Andersson I, see Kiessling K-H, et al

Ando K, see Takei Y, et al

Ando M (1985) Relationship between coupled $Na^+ - K^+ - Cl^-$ transport and water absorption across the seawater eel intestine 155:311

Andrews EB, Taylor PM (1988) Fine structure, mechanism of heart function and haemodynamics in the prosobranch gastropod mollusc *Littorina littorea* (L.) 158:247

Aoki K, see Kawasaki M

Applebaum SW, see Richard DS, et al

Ar A, see Visschedijk AHJ, et al

Arad Z, Arnason SS, Chadwick A, Skadhauge E (1985) Osmotic and hormonal responses to heat and dehydration in the fowl 155:227

Arad Z, Chadwick A, Rice GE, Skadhauge E (1986) Osmotic stimuli and NaCl-intake in the fowl; release of arginine vasotocin and prolactin 156:399

Arad Z, Midtgård U, Skadhauge E (1984) Effect of dehydration on body-to-brain temperature difference in heat-stressed fowl (*Gallus domesticus*) 154:295

Arad Z, see Midtgård U, et al

Ardizzoni SC, see Hamilton PV, et al

Arieli R, see Edoute Y, et al

Armett-Kibel C, Meinertzhagen IA (1983) Structural organization of the ommatidium in the ventral compound eye of the dragonfly *Sympetrum* (A) 151:285

Armitage KB, Melcher JC, Ward JM (1990) Oxygen consumption and body temperature in yellow-bellied marmot populations from montanemesic and lowland-xeric environments 160:491

Árnason SS, Rice GE, Chadwick A, Skadhauge E (1986) Plasma levels of arginine vasotocin, prolactin, aldosterone and corticosterone during prolonged dehydration in the domestic fowl: effect of dietary NaCl 156:383

Arnason SS, see Arad Z, et al

Arnesen AM, see Finstad B, et al

Arnold W (1988) Social thermoregulation during hibernation in alpine marmots (*Marmota marmota*) 158:151

Assenmacher I, see Jallageas M, et al

Atwood HL, see Stephens PJ

Auer B, see Burtscher HJ, et al

Aulie A, Tøien Ø (1988) Threshold for shivering in aerobic and anaerobic muscles in bantam cocks and incubating hens 158:431

Aulie A, see Tøien Ø, et al

Autrum H (1988) *In memoriam* B. Linzen 1983–1988 158:393

Autrum H, Linzen B (1983) A note from the executive editors 152:1

Autrum H, Linzen B (1983) A note from the executive editors (A) 152:145
Avnon Z, see Haim A, et al
Azuma M, see Okada N, et al

B

Bablanian GM, Treistman SN (1985) The effect of hyperpolarization of cell R15 on the hemolymph composition of intact *Aplysia* 155:297
Baddouri Kh, El Hilali M, Marchetti J, Menard J (1987) Renal excretion capacity in hydrated desert rodents (*Jaculus orientalis* and *Jaculus deserti*) 157:237
Badia P, Lorenzo A, Gomez T, Bolaños A (1988) Sodium chloride absorption across the ileal epithelium of the lizard *Gollotia galloti* 157:865
Badía P, see Lorenzo A, et al
Bagarinao T, Vetter RG (1990) Oxidative detoxification of sulfide by mitochondria of the California killifish *Fundulus parvipinnis* and the speckled sanddab *Citharichthys stigmaeus* 160:519
Bailey J, see Sephton D, et al
Bailey SER, Lazaridou-Dimitriadou M (1991) Inverse temperature acclimation of heart rate in hibernating land snails 160:677
Bairlein F (1986) Spontaneous, approximately semimonthly rhythmic variations of body weight in the migratory garden warbler (*Sylvia borin* Boddaert) 156:859
Bakker R, see Groot JA, et al
Ballam GO, see Coates EL
Ballam GO, Donaldson LA (1988) Effect of venous (gut) CO_2 loading on intrapulmonary gas fractions and ventilation in the tegu lizard 158:591
Ballantyne JS, Moon TW (1986) The effects of urea, trimethylamine oxide and ionic strength on the oxidation of acyl carnitines by mitochondria isolated from the liver of the Little Skate *Raja erinacea* 156:845
Banister MJ, see White RH, et al
Baratz KH, see May SA, et al
Barclay RMR (1983) Echolocation calls of emballonurid bats from Panama (A) 151:515
Bard C, see Simmons JA, et al
Bårdgard A, see Brix O, et al
Barja de Quiroga G, Gil P, López-Torres M (1988) Physiological significance of catalase and glutathione peroxidases, and in vivo peroxidation, in selected tissues of the toad *Discoglossus pictus* (Amphibia) during acclimation to normobaric hyperoxia 158:583
Barja de Quiroga G, see López-Torres M, et al
Barnas GM, Burger RE (1984) Effect of chronic acidosis on discharge frequency of intrapulmonary chemoreceptors in the chicken 154:393
Barnas GM, Gleeson M, Rautenberg W (1984) Respiratory and cardiovascular responses to spinal cord cooling at thermoneutral, low and high ambient temperatures in the chicken 155:103
Barnes BM (1984) Influence of energy stores on activation of reproductive function in male golden-mantled ground squirrels 154:421
Barnhart MC (1986) Control of acid-base status in active and dormant land snails, *Otala lactea* (Pulmonata, Helicidae) 156:347
Barra JA, see Simonneaux V, et al
Barré H (1984) Metabolic and insulative changes in winter- and summer-acclimatized King Penguin chicks 154:317
Barrett A, see Youson JH, et al
Barrett J, see Wharton DA, et al
Bartels H, see Yamaguchi K, et al
Barth FG, see Hergenröder R
Barthelemy L, see Thomas S, et al
Bartholomew GA, Lighton JRB (1986) Endothermy and energy metabolism of a giant tropical fly, *Pantophthalmus tabaninus* Thunberg 156:461
Bartholomew GA, Lighton JRB, Louw GN (1985) Energetics of locomotion and patterns of respiration in tenebrionid beetles from the Namib Desert 155:155
Bartholomew GA, see Bell GP, et al
Barwig B (1985) Isolation and characterization of plasma coagulogen (PC) of the cockroach *Leucophaea maderae* (Blattaria) 155:135
Barwig B, see Bohn H
Battram JC, see Huddart H
Baudinette RV, Gill P (1985) The energetics of 'flying' and 'paddling' in water: locomotion in penguins and ducks 155:373
Baudinette RV, see Geiser F
Baudinette RV, see Roberts JR
Bauman WA, see Florant GL, et al
Baumann E, Gäde G, Penzlin H (1990) Structure-function studies on neurohormone D: activity of naturally occurring hormone analogues 160:423
Baumann E, Penzlin H (1987) Inactivation of neurohormone D by Malpighian tubules in an insect, *Periplaneta americana* 157:511
Bausch RG, see Claussen DL, et al
Bayliss D, see Harris RR
Bayliss D, Harris RR (1988) Chloride ion regulation in the freshwater amphipod *Corophium curvispinum* and acclimatory effects of external Cl^- 158:81
Beal AM (1989) Secretion by the mandibular gland of the red kangaroo (*Macropus rufus*) during isoprenaline infusion 159:601
Beals JM, see Neven LG, et al
Bech C, Rautenberg W, May-Rautenberg B (1988) Thermoregulatory responses of the pigeon (*Columba livia*) to selective changes in the inspired air temperature 157:747
Becker W, see Liebsch M
Becker W, see Meyer R, et al
Beinhauer I, see Wegener G, et al
Beis I, see Gaitanaki C, et al
Beis I, see Kaloyianni-Dimitriades M
Beis I, see Lazou A
Beis I, see Michaelidis B, et al
Beis I, see Touraki M
Beis Is, see Lazou A, et al
Bell CC, see Meyer JH
Bell GP, Bartholomew GA, Nagy KA (1986) The roles of energetics, water economy, foraging behavior, and geothermal refugia in the distribution of the bat, *Macrotus californicus* 156:441
Bell JG, Buddington RK, Walton MJ, Cowey CB (1987) Studies on the putative role of γ-glutamyl transpeptidase in intestinal transport of amino acids in Atlantic salmon 157:161
Bennett AF, Huey RB, John-Alder HB (1984) Physiological correlates of natural activity and locomotor capacity in two species of lacertid lizards 154:113
Bennett AF, John-Alder HB (1984) The effect of body temperature on the locomotory energetics of lizards 155:21
Bennett AF, see John-Alder HB
Bennett AF, see John-Alder HB, et al
Bennett AF, see Marsh RL
Bennett MB, Rankin JC (1987) The effects of catecholamines on tritiated water influx and the branchial vasculature of the European eel, *Anguilla anguilla* L. 157:327
Bennett MF, Daigle KR (1983) Temperature, stress and the distribution of leukocytes in red-spotted newts, *Notophthalmus viridescens* (A) 153:81
Bennett RR, see White RH, et al
Bentley PJ, see Grubb BR
Bentley PJ, see Grubb BR, et al
Bernard J, Gobin B, Callec JJ (1983) A chordotonal organ inhibits giant interneurones in the sixth abdominal ganglion of the cockroach (A) 153:377
Berry RW (1984) Environmental temperature modulates the rate of synthesis of egg-laying hormone in *Aplysia* 154:545
Bertsch A, see Surholt B, et al
Best RC, see Gallivan GJ, et al
Beuchat CA, Pough FH, Stewart MM (1984) Response to simultaneous dehydration and thermal stress in three species of Puerto Rican frogs 154:579
Bevan C, Kinne RKH, Shetlar RE, Kinne-Saffran E (1989) Presence of a Na^+/H^+ exchanger in brush border membranes isolated from the kidney of the spiny dogfish, *Squalus acanthias* 159:339
Beyenbach KW, see Williams Jr JC
Beyenbach KW, see Williams Jr JC, et al
Bhargava V, see Lai NC, et al
Bianchini L, Fossat B, Porthé-Nibelle J, Lahlou B (1990) Characteristics of ouabain binding to isolated trout hepatocytes 160:93
Bickler PE (1984) Effects of temperature on acid and base excretion in a lizard, *Dipsosaurus dorsalis* 154:97
Bickler PE (1986) Day-night variations in blood and intracellular pH in a lizard, *Dipsosaurus dorsalis* 156:853
Bidigare RR, see Morrill AC, et al
Biesel W, Nachtigall W (1987) Pigeon flight in a wind tunnel. IV. Thermoregulation and water homeostasis 157:117
Biesel W, see Hirth KD, et al
Biesel W, see Rothe H-J, et al
Bijlholt MMC, see Stöcker W, et al
Bilo A, see Bilo D
Bilo D, Bilo A (1983) Neck flexion related activity of flight control muscles in the flow-stimulated pigeon (A) 153:111
Binkley S, Mosher K, White BH (1989) Pho-

toperiod modifies daily maps of light and dark sensitivity for N-acetyltransferase activity in pineal glands of 3-week old *Gallus domesticus* 159:37
Bintz GL (1985) Radioglucose metabolism by Richardson's ground squirrels in the weight-gain and weight-loss phases of the circannual cycle 156:87
Bintz GL (1988) Lipid synthesis and deposition by adult Richardson's ground squirrels in the natural environment 158:199
Birchard GF, see Boggs DF
Birnbaum MJ, Gilbert LI (1990) Juvenile hormone stimulation of ornithine decarboxylase activity during vitellogenesis in *Drosophila melanogaster* 160:145
Björnsson BTh, Haux C (1985) Distribution of calcium, magnesium and inorganic phosphate in plasma of estradiol-17β treated rainbow trout 155:347
Black D, Love RM (1986) The sequential mobilisation and restoration of energy reserves in tissues of Atlantic cod during starvation and refeeding 156:469
Black D, Skinner ER (1986) Features of the lipid transport system of fish as demonstrated by studies on starvation in the rainbow trout 156:497
Blankenship JE, see Kelner KL, et al
Blankenship JE, see Nagle GT, et al
Block BA, Carey FG (1985) Warm brain and eye temperatures in sharks 156:229
Blum MS, see Fletcher DJC
Blundon JA (1989) Effects of temperature and thermal history on neuromuscular properties of two crustacean species 158:689
Boardman TJ, see Packard GC, et al
Bodenhamer RD, Pollak GD (1983) Response characteristics of single units in the inferior colliculus of mustache bats to sinusoidally frequency modulated signals (A) 153:67
Bodznick D, Preston DG (1983) Physiological characterization of electroreceptors in the lampreys *Ichthyomyzon unicuspis* and *Petromyzon marinus* (A) 152:209
Boekhoff I, Raming K, Breer H (1990) Pheromone induced stimulation of inositol-trisphosphate formation in insect antennae is mediated by G-proteins 160:99
Boemare N, see Brehélin M
Boeuf G, see Aguenaou H, et al
Boggs DF, Birchard GF (1989) Cardiorespiratory responses of the woodchuck and porcupine to CO_2 and hypoxia 159:641
Bohn H, Barwig B (1984) Hemolymph clotting in the cockroach *Leucophaea maderae* (Blattaria). Influence of ions and inhibitors; isolation of the plasma coagulogen 154:457
Bohn H, Saks TM (1986) Inhibition of crosslinking in clotting of cockroach hemolymph (*Leucophaea maderae*) (Blaberidae, Blattaria) 156:625
Bohn H, see Ferstl S, et al
Boiden Pedersen J, see Jensen FB, et al
Bolaños A, see Badia P, et al
Bollenbacher WE, see Dorn A, et al
Bols NC, see Mosser DD
Bont AMT de, see Zwaan A de, et al
Booth DT, see Seymour RS, et al
Booz G, see Kleinzeller A, et al
Borch-Iohnsen B, see Grav JH, et al
Borst A (1983) Computation of olfactory signals in *Drosophila melanogaster* (A) 152:373
Böttcher K, see Siebers D, et al
Bouthier A, Lhonoré J (1984) Developmental changes in the amount of pigments, inorganic material and uric acid in *Locusta migratoria cinerascens* Fabr. (Orthoptera, Acrididae) epidermis, during the last larval instar and the imaginal life 154:549
Boutilier RG, see Glass ML, et al
Boyan GS (1983) Postembryonic development in the auditory system of the locust. Anatomical and physiological characterisation of interneurones ascending to the brain (A) 151:499
Boyd P, Lewis B (1983) Peripheral auditory directionality in the cricket (*Gryllus campestris* L., *Teleogryllus oceanicus* Le Guillou) (A) 153:523
Boyer JL, see Grossbard ML, et al
Brackenbury J, Gleeson M (1985) Separate and combined effects of temperature and hypoxia on breathing pattern in the domestic fowl 156:109
Bradford DF, see Seymour RS
Braumann T, see Techel D, et al
Braun EJ, see Goldstein DL
Breer H, see Boekhoff I, et al
Breer H, see Raming K, et al
Brehélin M, Boemare N (1988) Immune recognition in insects: conflicting effects of autologous plasma and serum 157:759
Bretten S, see Steen JB, et al
Bretting H, see Knels U
Bridges CR, see Morris S, et al
Bridges CR, see Taylor AC, et al
Brigham RM, Ianuzzo CD, Hamilton N, Fenton MB (1990) Histochemical and biochemical plasticity of muscle fibers in the little brown bat (*Myotis lucifugus*) 160:183
Brill R, see Johnston IA
Brix O, Bårdgard A, Mathisen S, Tyler N, Nuutinen M, Condo SG, Giardina B (1990) Oxygen transport in the blood of arctic mammals: adaptation to local heterothermia 159:655
Broce AB, see Krueger RA, et al
Bromhall C (1987) Spider heart-rates and locomotion 157:451
Bronson FH (1987) Susceptibility of the fat reserves of mice to natural challenges 157:551
Brooks DD, see Huddart H, et al
Brooks SPJ, Storey KB (1990) cGMP-Stimulated protein kinase phosphorylates pyruvate kinase in an anoxia-tolerant marine mollusc 160:309
Brown CR (1985) Energetic cost of moult in macaroni penguins (*Eudyptes chrysolophus*) and rockhopper penguins (*E. chrysocome*) 155:515
Bruggen EFJ van, see Stöcker W, et al
Brummermann M, Simon E (1990) Arterial hypotension in ducks adapted to high salt intake 160:127
Bryceson KP, McIntyre P (1983) Image quality and acceptance angle in a reflecting superposition eye (A) 151:367
Buchberger A, see Heldmaier G
Bucher TL (1985) Ventilation and oxygen consumption in *Amazona viridigenalis*. A reappraisal of 'resting' respiratory parameters in birds 155:269
Bucher TL, Morgan KR (1989) The effect of ambient temperature on the relationship between ventilation and metabolism in a small parrot (*Agapornis roseicollis*) 159:561
Bucher TL, see Carey C, et al
Bucher TL, see Chappell MA, et al
Buchmann SL, see Heinrich B
Bückmann D, Starnecker G, Tomaschko K-H, Wilhelm E, Lafont R, Girault J-P (1986) Isolation and identification of major ecdysteroids from the pycnogonid *Pycnogonum litorale* (Ström) (Arthropoda, Pantopoda) 156:759
Buddington RK (1987) Does the natural diet influence the intestine's ability to regulate glucose absorption? 157:677
Buddington RK, see Bell JG, et al
Buffenstein R (1984) Energy and water balance during torpor and hydropenia in the pigmy gerbil, *Gerbillus pusillus* 154:535
Buffenstein R (1985) The effect of a high fibre diet on energy and water balance in two Namib desert rodents 155:211
Buffenstein R, Campbell WE, Jarvis JUM (1985) Identification of crystalline allantoin in the urine of African Cricetidae (Rodentia) and its role in their water economy 155:493
Burger RE, see Adamson TP, et al
Burger RE, see Barnas GM
Burghagen H, Ewert J-P (1983) Influence of the background for discriminating object motion from self-induced motion in toads *Bufo bufo* (L.) (A) 152:241
Burgoon DA, Kilgore Jr DL, Motta PJ (1987) Brain temperature in the calliope hummingbird (*Stellula calliope*): a species lacking a *rete mirabile ophthalmicum* 157:583
Burkhardt D, Motte I de la (1983) How stalk-eyed flies eye stalk-eyed flies: observations and measurements of the eyes of *Cyrtodiopsis whitei* (Diopsidae, Diptera) (A) 151:407
Burnett LE, see McMahon BR, et al
Burtin B, see Massabuau JC
Burton RS, see Goolish EM
Burtscher HJ, Schneider R, Klocker H, Auer B, Hirsch-Kauffmann M, Schweiger M (1987) ADP-ribosyltransferase is highly conserved: purification and characterization of ADP-ribosyltransferase from a fish and its comparison with the human enzyme 157:567
Bush BMH, see Cannone AJ
Butler PJ, Milsom WK, Woakes AJ (1984) Respiratory, cardiovascular and metabolic adjustments during steady state swimming in the green turtle, *Chelonia mydas* 154:167
Butler PJ, see Metcalfe JD
Buu NT, see Racz K, et al
Buzzell GR, see Hoffman RA, et al

C

Cabanac M (1989) Fever in the leech, *Nephelopsis obscura* (Annelida) 159:281
Cagol E, see Rayer B, et al

Cake MH, see Macey DJ, et al
Calandra RS, see Lüthy IA, et al
Calgari C, see Malan A, et al
Callec JJ, see Bernard J, et al
Campbell TJ (1989) Characteristics of cardiac action potentials in marsupials 158:759
Campbell WE, see Buffenstein R, et al
Canguilhem B, see Galluser M, et al
Cannone AJ, Bush BMH (1983) Dual reflex motor control of non-spiking crab muscle receptor. II. Reinforcement of Rm1 mediated positive feedback by dual afferent excitation of Rm2 (A) 153:309
Capranica RR, see Megela AL
Carey C, Leon-Velarde F, Dunin-Borkowski O, Bucher TL, Torre G de la, Espinoza D, Monge C (1989) Variation in eggshell characteristic and gas exchange of montane and lowland coot eggs 159:389
Carey C, see Marsh RL, et al
Carey FG, see Block BA
Carey FG, see Wolf NG, et al
Cariello L, see Agnisola C, et al
Cariolou MA, Morse DE (1988) Purification and characterization of calcium-binding conchiolin shell peptides from the mollusc, *Haliotis rufescens*, as a function of development 157:717
Carlberg M, Rosengren E (1985) Biochemical basis for adrenergic neurotransmission in coelenterates 155:251
Carlhoff D, D'Haese J (1987) Slow type muscle cells in the earthworm gizzard with a distinct, Ca^{2+}-regulated myosin isoform 157:589
Carlhoff D, see D'Haese J
Carlsson K-H, Gäde G (1985) Isolation and characterisation of tissue-specific isoenzymes of D-lactate dehydrogenase from muscle and hepatopancreas of *Limulus polyphemus* 155:723
Carpenter JF, Hand SC (1986) Arrestment of carbohydrate metabolism during anaerobic dormancy and aerobic acidosis in *Artemia* embryos: determination of pH-sensitive control points 156:451
Carpenter R, see Hazel JR
Carr WES, Thompson HW (1983) Adenosine 5′-monophosphate, an internal regulatory agent, is a potent chemoattractant for a marine shrimp (A) 153:47
Cartwright BA, Collett TS (1983) Landmark learning in bees. Experiments and models (A) 151:521
Castellini JM, Castellini MA, Kretzman MB (1990) Circulatory water concentration in suckling and fasting northern elephant seal pups 160:537
Castellini MA, Costa DP, Huntley AC (1987) Fatty acid metabolism in fasting elephant seal pups 157:445
Castellini MA, see Castellini JM, et al
Castellini MA, see Davis RW, et al
Castellini MA, see Kooyman GL, et al
Castellini MA, see Ponganis PJ, et al
Castellino FJ, see Duman JG, et al
Castellino FJ, see Neven LG, et al
Castex C, see Florant GL, et al
Cech Jr JJ, see Nikinmaa M, et al
Cha C-J, see Kleinzeller A, et al
Chadwick A, see Arad Z, et al
Chadwick A, see Árnason SS, et al
Chadwick A, see Hall TR, et al
Chamberlin ME (1987) Enzyme activities and mitochondrial substrate oxidation in tobacco hornworm midgut 157:643
Chamberlin ME, Phillips JE (1983) Oxidative metabolism in the locust rectum 151:191
Chand P, see Goyal SP, et al
Chand P, see Sasidharan TO, et al
Chappell MA (1985) Effects of ambient temperature and altitude on ventilation and gas exchange in deer mice (*Peromyscus maniculatus*) 155:751
Chappell MA, Bucher TL (1987) Effects of temperature and altitude on ventilation and gas exchange in chukars (*Aiectoris chukar*) 157:129
Chappell MA, Ellis TM (1987) Resting metabolic rates in boid snakes: allometric relationships and temperature effects 157:227
Chappell MA, Holsclaw III DS (1984) Effects of wind on thermoregulation and energy balance in deer mice (*Peromyscus maniculatus*) 154:619
Chappell MA, Morgan KR, Souza SL, Bucher TL (1989) Convection and thermoregulation in two Antarctic seabirds 159:313
Chappell MA, Souza SL (1988) Thermoregulation, gas exchange, and ventilation in Adelie penguins (*Psygoscelis adeliae*) 157:783
Chappell MA, see Ellis TM
Charest RP, Chenoweth M, Dunn A (1988) Metabolism and trimethylamines in kelp bass (*Paralabrax clathratus*) and marine and freshwater pink salmon (*Oncorhynchus gorbuscha*) 158:609
Charreau EH, see Lüthy IA, et al
Chen B, see Haupt J, et al
Chen C-P, Lee RE, Denlinger DL (1990) A comparison of the responses of tropical and temperate flies (Diptera: Sarcophagidae) to cold and heat stress 160:543
Chen ZF, see Thompson CS, et al
Chenoweth M, see Charest RP, et al
Cherel Y, see Le Ninan F, et al
Cherel Y, see Robin J-P, et al
Cheung R, see Youson JH, et al
Chilcott MJ, Moore SA, Hume ID (1985) Effects of water restriction on nitrogen metabolism and urea recycling in the macropodid marsupials *Macropus eugenii* (tammar wallaby) and *Thylogale thetis* (red-necked pademelon) 155:759
Chino H, see Chinzei Y, et al
Chinzei Y, Chino H, Takahashi K (1983) Purification and properties of vitellogenin and vitellin from a tick, *Ornithodoros moubata* 152:13
Chinzei Y, Yano I (1985) Fat body is the site of vitellogenin synthesis in the soft tick, *Ornithodoros moubata* 155:671
Chippendale GM, see Dillwith JW, et al
Chiu KW, Lee YC (1990) The cardiac effects of neurohypophysial hormones in the eel, *Anguilla japonica* (Temminck and Schlegel) 160:213
Christensen NJ, see Tetens V
Chung JM, Spencer AN, Gahm KH (1989) Dopamine in tissues of the hydrozoan jellyfish *Polyorchis penicillatus* as revealed by HPLC and GC/MS 159:173
Chung J-S, Keeley LL (1989) Evidence and bioassay for diuretic factors in the nervous system of larval *Heliothis virescens* 159:359
Churchill TA, Storey KB (1989) Metabolic correlates to glycerol biosynthesis in a freeze-avoiding insect, *Epiblema scudderiana* 159:461
Claireaux G, see Maxime V, et al
Clark SD, see Horwitz BA, et al
Clarke JDW, see Roberts A
Clarke JDW, see Soffe SR, et al
Clauss W, see Hoffmann B, et al
Clauss W, see Krattenmacher R, et al
Claussen DL, Townsley MD, Bausch RG (1990) Supercooling and freeze-tolerance in the European wall lizard, *Podarcis muralis*, with a revisional history of the discovery of freeze-tolerance in vertebrates 160:137
Clemens DT (1988) Ventilation and oxygen consumption in rosy finches and house finches at sea level and high altitude 158:57
Coates EL, Ballam GO (1987) Upper airway CO_2 receptors in tegu lizards: localization and ventilatory sensitivity 157:483
Cochran SL, see Dieringer N, et al
Cock Buning T de (1983) Thresholds of infrared sensitive tectal neurons in *Python reticulatus*, *Boa constrictor* and *Agkistrodon rhodostoma* (A) 151:461
Colin DA, see Aguenaou H, et al
Collett TS, see Cartwright BA
Collie NL (1985) Intestinal nutrient transport in coho salmon (*Oncorhynchus kisutch*) and the effects of development, starvation, and seawater adaptation 156:163
Condo SG, see Brix O, et al
Condron RJ, see Marshall AT, et al
Conley KE (1985) Evaporative water loss: thermoregulatory requirements and measurements in the deer mouse and white rabbit 155:433
Conley KE, Porter WP (1985) Heat loss regulation: role of appendages and torso in the deer mouse and the white rabbit 155:423
Connat J-L, Dotson EM, Diehl PA (1987) Metabolism of ecdysteroids in the female tick *Amblyomma hebraeum* (Ixodoidea, Ixodidae): accumulation of free ecdysone and 20-hydroxyecdysone in the eggs 157:689
Conti E, Toulmond A (1986) Ventilatory response to ambient hypo- and hypercapnia in the lugworm, *Arenicola marina* (L.) 156:797
Cook JP, see Kasschau MR, et al
Cooke IM, see Tazaki K
Coombe DR, Ey PL, Jenkin CR (1984) Particle recognition by haemocytes from the colonial ascidian *Botrylloides leachii*: evidence that the *B. leachii* HA-2 agglutinin is opsonic 154:509
Cooper BF, Krontiris-Litowitz JK, Walters ET (1989) Humoral factors released during trauma of *Aplysia* body wall. II. Effects of possible mediators 159:225
Cooper BF, see Krontiris-Litowitz JK, et al
Cooper PD, Jungreis AM (1985) Chloride transport across the integumentary epithel-

um of *Manduca sexta* (Lepidoptera: Sphingidae) 155:743
Cooper PD, see Marshall AT
Corbière-Tichané G, Loftus R (1983) Antennal thermal receptors of the cave beetle, *Speophyes lucidulus* Delar. II. Cold receptor response to slowly changing temperature (A) 153:343
Cordeiro de Sousa MB, Hoffmann A (1985) Autonomic adjustments during avoidance and orienting responses induced by electrical stimulation of the central nervous system in toads (*Bufo paracnemis*) 155:381
Coria NR, see Culik B, et al
Cork SJ, Hume ID (1983) Microbial digestion in the koala (*Phascolarctos cinereus*, Marsupialia), an arboreal folivore 152:131
Cork SJ, Hume ID, Dawson TJ (1983) Digestion and metabolism of a natural foliar diet (*Eucalyptus punctata*) by an arboreal marsupial, the koala (*Phascolarctos cinereus*) 153:181
Cork SJ, Warner ACI (1983) The passage of digesta markers through the gut of a folivorous marsupial, the koala *Phascolarctos cinereus* 152:43
Cornell JC, Jungreis AM (1983) Potassium transport in the isolated pharate pupal integument of the tobacco hornworm, *Manduca sexta* 153:147
Cornell LH, see Wickham LL, et al
Costa CJ, Pierce SK (1983) Volume regulation in the red coelomocytes of *Glycera dibranchiata*: an interaction of amino acid and K^+ effluxes 151:133
Costa DP, see Castellini MA, et al
Courtice GP, McCloskey DI (1985) Modification of vagal action on the toad heart by changes in flow 155:571
Cowey CB, see Bell JG, et al
Cox RP, see Weber RE, et al
Crawford EC, see Dupré RK
Crawshaw LI, see Wollmuth LP, et al
Creekmore JS, see Stephens GA
Crockford T, Johnston IA (1990) Temperature acclimation and the expression of contractile protein isoforms in the skeletal muscles of the common carp (*Cyprinus carpio* L.) 160:23
Croll DA, see Ponganis PJ, et al
Croll DA, see Williams TM, et al
Cruz-Orive LM, see Hoppeler H, et al
Cuello ME, see Segura ET, et al
Culik B, Woakes AJ, Adelung D, Wilson RP, Coria NR, Spairani HJ (1990) Energy requirements of Adélie penguin (*Psygoscelis adeliae*) chicks 160:61
Czapla TH, Hopkins TL, Kramer KJ (1990) Catecholamines and related *o*-diphenols in cockroach hemolymph and cuticle during sclerotization and melanization: Comparative studies on the order Dictyoptera 160:175

D

Dabrowski K (1990) Absorption of ascorbic acid and ascorbic sulfate and ascorbate metabolism in common carp (*Cyprinus carpio* L.) 160:549
Dahl HA, see Grav JH, et al
Daigle KR, see Bennett MF
Dalessio PM, see Gleeson TT
D'Aniello A, Strazzullo L, D'Onofrio G, Pischetola M (1986) Electrolytes and nitrogen compounds of body fluids and tissues of *Octopus vulgaris* Lam. 156:503
Dashow L, Epple A (1983) Effects of exogeneous catecholamines on plasma catecholamines and glucose in the sea lamprey, *Petromyzon marinus* 152:35
Daull F, see Malan A, et al
Davey NJ, Seller TJ (1984) Brainstem regions involved in the generation of respiratory movements in quail 155:37
Davidson BC, see Kurstjens SP, et al
Davies PMC, see Patterson JW
Davis BJ, Riggs AF (1986) Effects of sodium chloride and carbon dioxide on oxygen binding by *Artemia* hemoglobin 156:355
Davis JP, Keenan CL, Stephens GC (1985) Na^+-dependent amino acid transport in bacteria-free sea urchin larvae 156:121
Davis JP, Stephens GC (1983) Determination of net flux of 14 amino acids in *Tetrahymena pyriformis* 152:27
Davis JP, Stephens GC (1986) Regulation of System L amino acid transport by *Tetrahymena thermophilia* 156:891
Davis MS, Shuttleworth TJ (1985) Peptidergic and adrenergic regulation of electrogenic ion transport in isolated gills of the flounder (*Platichthys flesus* L.) 155:471
Davis RW (1983) Lactate and glucose metabolism in the resting and diving harbor seal (*Phoca vitulina*) 153:275
Davis RW, Castellini MA, Williams TM, Kooyman GL (1991) Fuel homeostasis in the harbor seal during submerged swimming 160:627
Davis RW, see Kooyman GL, et al
Dawson TJ, Herd RM, Skadhauge E (1983) Water turnover and body water distribution during dehydration in a large arid-zone bird, the Emu, *Dromaius novaehollandiae* 153:235
Dawson TJ, see Cork SJ, et al
Dawson WR, see Marsh RL, et al
Day N, see Finlayson LH, et al
De Santis A, see Agnisola C, et al
De Costa J, see Mendiola P
Deeming DC, Ferguson MWJ (1989) Effects of incubation temperature on growth and development of embryos of *Alligator mississippiensis* 159:183
Degnan KJ, see May SA
Degnan KJ, see May SA, et al
DeHaan CH, see Stout JF, et al
Dejours P, Truchot J-P (1988) Respiration of the emersed shore crab at variable ambient oxygenation 158:387
Dejours P, see Massabuau J-C, et al
Dekker K, see Groot JA, et al
Denlinger DL, see Chen C-P, et al
Denlinger DL, see Gnagey AL
Denlinger DL, see Kukal O, et al
D'Haese J, Carlhoff D (1987) Localization and histochemical characterization of myosin isoforms in earthworm body wall muscle 157:171
D'Haese J, Hinssen H (1987) Isolation and characterization of a Ca^{2+}-activated actin-modulating protein from obliquely striated muscle 157:615
D'Haese J, see Carlhoff D
D'Haese J, see Huch R, et al
Diamond JM, see Karasov WH
Diamond JM, see Karasov WH, et al
DiCaprio RA, see Wilkens JL, et al
Diehl PA, see Connat J-L, et al
Dieringer N, Cochran SL, Precht W (1983) Differences in the central organization of gaze stabilizing reflexes between frog and turtle (A) 153:495
Dillwith JW, Lenz CJ, Chippendale GM (1986) Isolation and characterization of lipophorin from the hemolymph of diapausing larvae of the southwestern corn borer, *Diatraea grandiosella* 156:783
Dimberg K, Höglund LB (1987) Carbonic anhydrase activity in the blood and the gills of rainbow trout during long-term hypercapnia in hard, bicarbonate-rich freshwater 157:405
Dittami JP (1986) Seasonal reproduction, moult and their endocrine correlates in two tropical Ploceidae species 156:641
Dixon JM, Loretz CA (1986) Luminal alkalinization in the intestine of the goby 156:803
Dmi'el R, Schwarz M (1984) Hibernation patterns and energy expenditure in hedgehogs from semi-arid and temperate habitats 155:117
Dmi'el R, Tel-Tzur D (1985) Heat balance of two starling species (*Sturnus vulgaris* and *Onychognathus tristrami*) from temperate and desert habitats 155:395
Donald JA, O'Shea JE, Lillywhite HB (1990) Neural regulation of the pulmonary vasculature in a semi-arboreal snake, *Elaphe obsoleta* 159:677
Donaldson LA, see Ballam GO
D'Onofrio G, see D'Aniello A, et al
Dorn A, Gilbert LI, Bollenbacher WE (1987) Prothoracicotropic hormone activity in the embryonic brain of the tobacco hornworm, *Manduca sexta* 157:279
Dorsett DA, Evans CG (1989) The ionic basis of the resting potential of molluscan unstriated muscle 159:305
Dorsett DA, see Evans CG
Dotson EM, see Connat J-L, et al
Doumen C, Ellington WR (1990) Mitochondrial arginine kinase from the heart of the horseshoe crab, *Limulus polyphemus*. I. Physicochemical properties and nature of interaction with the mitochondrion 160:449
Doumen C, Ellington WR (1990) Mitochondrial arginine kinase from the heart of the horseshoe crab *Limulus polyphemus*. II. Catalytic properties and studies of potential functional coupling with oxidative phosphorylation 160:459
Drews G, Graszynski K (1987) The transepithelial potential difference in the gills of the fiddler crab, *Uca tangeri*: Influence of some inhibitors 157:345
Drews G, see Krippeit-Drews P, et al
Driedzic WR, Gesser H (1985) Ca^{2+} protection from the negative inotropic effect of

contraction frequency on teleost hearts 156:135
Driedzic WR, Hart T (1984) Relationship between exogeneous fuel availability and performance by teleost and elasmobranch hearts 154:593
Driedzic WR, see Sephton D, et al
Driscoll SM, see Grubb BR, et al
Drummond GI, see Weiss S, et al
Dryl S, see Hildebrand E
Duman JG, Morris JP, Castellino FJ (1984) Purification and composition of an ice nucleating protein from queens of the hornet, *Vespula maculata* 154:79
Duman JG, see Horwath KL
Duman JG, see Kukal O, et al
Duman JG, see Lei Xu, et al
Duman JG, see Neven LG, et al
Duncan G, see Jacob TJC
Dunin-Borkowski O, see Carey C, et al
Dunn A, see Charest RP, et al
Dunn RE, see Ahearn GA, et al
Dunson WA, see Freda J
Dunson WA, see Frisbie MP
Dunson WA, see Gonzalez RJ
Dupré RK, Crawford EC (1986) Elevation of the panting threshold of the desert iguana, *Dipsosaurus dorsalis*, during dehydration: Potential roles of changes in plasma osmolality and body fluid volume 156:377
Duthie G, see Houlihan DF, et al
Dvořák P, see Janský L, et al
Dykens JA, Mangum CP (1984) The regulation of body fluid volume in the estuarine annelid *Nereis succinea* 154:607

E

Ebara A, see Kuramoto T
Eddy FB, Ward MR, Talbot C, Primmett D (1990) Ionic movements across the chorion in newly shed salmon eggs (*Salmo salar* L.) 159:771
Eddy FB, see Williams EM
Edmunds Jr LN, see Malinowski JR, et al
Edoute Y, Arieli R, Nevo E (1988) Evidence for improved myocardial oxygen delivery and function during hypoxia in the mole rat 158:575
Edwards SC, Pierce SK (1986) Octopamine potentiates intracellular Na^+ and Cl^- reductions during cell volume regulation in *Limulus* exposed to hypoosmotic stress 156:481
Eguchi M, see Okada N, et al
Ehlers D, Sakowski I, Mohrig W (1989) Comparative studies on the adhesiveness of granulocytes of guinea pig and man 159:481
Ehrenström F, Ungell A-L (1990) Nerve impulse-induced release of endogenous noradrenaline and adrenaline from the perfused cod spleen 160:401
El Hilali M, see Baddouri Kh, et al
Elger B, see Elger E, et al
Elger B, see Wolff NA, et al
Elger E, Elger B, Hentschel H, Stolte H (1987) Adaptation of renal function to hypotonic medium in the winter flounder (*Pseudopleuronectes americanus*) 157:21
Elger M, Kaune R, Hentschel H (1984) Glomerular intermittency in a freshwater teleost, *Carassius auratus gibelio*, after transfer to salt water 154:225
Ellefson RD, see Ahlquist DA, et al
Ellington WR (1983) Phosphorus nuclear magnetic resonance studies of energy metabolism in molluscan tissues: Effect of anoxia and ischemia on the intracellular pH and high energy phosphates in the ventricle of the whelk, *Busycon contrarium* 153:159
Ellington WR, see Doumen C
Ellis TM, Chappell MA (1987) Metabolism, temperature relations, maternal behavior, and reproductive energetics in the ball python (*Python regius*) 157:393
Ellis TM, see Chappell MA
Else PL, Hulbert AJ (1985) An allometric comparison of the mitochondria of mammalian and reptilian tissues: The implications for the evolution of endothermy 156:3
Elsner R, see Wickham LL, et al
Engelhardt W v, see Heller R, et al
Epple A, Nibbio B (1985) Catecholaminotropic effects of catecholamines in a teleost fish, *Anguilla rostrata* 155:285
Epple A, see Dashow L
Epstein FH, see Silva P, et al
Epstein JA, see Silva P, et al
Erasmus T, see Gray DA
Erbe K-H, Gerstberger R, Gray DA, Simon E (1988) Electrolyte handling and osmoregulatory hormones in ducks during Na^+-free or Cl^--free hypertonic salt gland stimulation 158:9
Erber J, see Mercer AR
Erxleben C, see Rathmayer W
Escudié B, see Simmons JA, et al
Espinoza D, see Carey C, et al
Esteban S, Rayó JM, Moreno M, Sastre M, Rial RV, Tur JA (1991) A role played by the vitelline diverticulum in the yolk sac resorption in young post-hatched chickens 160:645
Evans CG, Dorsett DA (1989) Pre- and postsynaptic actions of the cerebral ventral giant cell on buccal muscle of *Philine* 159:509
Evans CG, see Dorsett DA
Evans DL, Rose RJ (1988) Dynamics of cardiorespiratory function in Standardbred horses during different intensities of constant-load exercise 157:791
Evans RE, see Marui T, et al
Ewert J-P, see Burghagen H
Ewert J-P, see Finkenstädt T
Ey PL, see Coombe DR, et al

F

Fahrenholz L, Lamprecht I, Schricker B (1989) Thermal investigations of a honey bee colony: thermoregulation of the hive during summer and winter and heat production of members of different bee castes 159:551
Famme P, Knudsen J (1984) Total heat balance study of anaerobiosis in *Tubifex tubifex* (Müller) 154:587
Farner DS, see Moore MC, et al
Farrell TP, see Milligan CL
Favrel P, see Van Wormhoudt A, et al
Fein A, see Wood SF, et al
Feist CF, see Feist DD
Feist DD, Feist CF (1986) Effects of cold, short day and melatonin on thermogenesis, body weight and reproductive organs in Alaskan red-backed voles 156:741
Felbeck H (1983) Sulfide oxidation and carbon fixation by the gutless clam *Solemya reidi*: an animal-bacteria symbiosis 152:3
Feller P, Nachtigall W (1989) Flight of the honey bee. II. Inner- and surface thorax temperatures and energetic criteria, correlated to flight parameters 158:719
Feller P, see Nachtigall W, et al
Fenton MB, see Brigham RM, et al
Ferguson MWJ, see Deeming DC
Ferraris JD (1984) Volume regulation in intertidal *Procephalothrix spiralis* (Nemertina) and *Clitellio arenarius* (Oligochaeta). II. Effects of decerebration under fluctuating salinity conditions 154:125
Ferraris RP, Ahearn GA (1983) Intestinal glucose transport in carnivorous and herbivorous marine fishes 152:79
Ferstl S, Weber J, Bohn H (1988) Conditions for the association of the two clotting proteins of the cockroach *Rhyparobia* (*Leucophaea*) *maderae* (Blattaria) 158:527
Fielder DR, see Gehrke PC
Fievet B, see Thomas S, et al
Finch CA, see Huebers HA, et al
Fincke T, Paul R (1989) Book lung function in arachnids. III. The function and control of the spiracles 159:433
Fincke T, see Paul R
Fincke T, see Paul R, et al
Finkenstädt T, Ewert J-P (1983) Processing of area dimensions of visual key stimuli by tectal neurons in *Salamandra salamandra* (A) 153:85
Finkenstädt T, Ewert J-P (1983) Visual pattern discrimination through interactions of neural networks: a combined electrical brain stimulation, brain lesion, and extracellular recording study in *Salamandra salamandra* (A) 153:99
Finlayson LH, Orchard I, Day N (1983) A factor in the haemolymph of the stick insect that depresses the activity of extraganglionic neurosecretory cells (A) 152:283
Finstad B, Nilssen KJ, Arnesen AM (1989) Seasonal changes in sea-water tolerance of Arctic charr (*Salvelinus alpinus*) 159:371
Firth BT, Turner JS, Ralph CL (1989) Thermoregulatory behaviour in two species of iguanid lizards (*Crotaphytus collaris* and *Sauromalus obesus*): diel variation and the effect of pinealectomy 159:13
Fittinghoff CM, Riddiford LM (1990) Heat sensitivity and protein synthesis during heatshock in the tobacco hornworm, *Manduca sexta* 160:349
Fletcher DJC, Blum MS (1983) The inhibitor pheromone of queen fire ants: effects of dinhibition on dealation and oviposition by virgin queens (A) 153:467
Fletcher GL, see Graham MS
Fletcher GL, see Hew CL, et al

Flieger E, see Schnitzler H-U
Flöge J, Stolte H, Kinne R (1984) Presence of a sodium-dependent D-glucose transport system in the kidney of the atlantic hagfish (*Myxine glutinosa*) 154:355
Flønes AG, see Lyngstadaas SP, et al
Florant GL, Hoo-Paris R, Castex C, Bauman WA, Sutter BCh (1986) Pancreatic A and B cell stimulation in euthermic and hibernating marmots (*Marmota flaviventris*): effects of glucose and arginine administration 156:309
Focesi Jr A, see Lima AAB, et al
Focke P, see Paul R, et al
Foley WJ (1987) Digestion and energy metabolism in a small arboreal marsupial, the Greater Glider (*Petauroides volans*), fed high-terpene *Eucalyptus* foliage 157:355
Foley WJ, Hume ID (1987) Digestion and metabolism of high-tannin *Eucalyptus* foliage by the brushtail possum (*Trichosurus vulpecula*) (Marsupialia: Phalangeridae) 157:67
Foley WJ, see Rübsamen K, et al
Follett BK, Nicholls TJ (1988) Acute effect of thyroid hormones in mimicking photoperiodically induced release of gonadotropins in Japanese quail 157:837
Follett BK, Nicholls TJ, Mayes CR (1988) Thyroxine can mimic photoperiodically induced gonadal growth in Japanese quail 157:829
Forrest Jr JN, see Kleinzeller A, et al
Forstner H, Wieser W (1990) Patterns of routine swimming and metabolic rate in juvenile cyprinids at three temperatures: analysis with a respirometer-activity-monitoring system 160:71
Forstner H, see Wieser W
Fossat B, see Bianchini L, et al
Fournier P, Guderley H (1986) Evolution of the functional properties of pyruvate kinase isozymes: pyruvate kinase L from *Rana pipiens* 156:691
Fowler PA, Racey PA (1990) Daily and seasonal cycles of body temperature and aspects of heterothermy in the hedgehog *Erinaceus europaeus* 160:299
Freda J, Dunson WA (1986) The effect of prior exposure on sodium uptake in tadpoles exposed to low pH water 156:649
French AR (1985) Allometries of the durations of torpid and euthermic intervals during mammalian hibernation: A test of the theory of metabolic control of the timing of changes in body temperature 156:13
Fricke RA, Kennedy D (1983) Inhibition of mechanosensory neurons in the crayfish. III. Presynaptic inhibition of primary afferents by a central proprioceptive tract (A) 153:443
Frisbie MP, Dunson WA (1988) The effect of food consumption on sodium and water balance in the predaceous diving beetle, *Dytiscus verticalis* 158:91
Fritsche R, Nilsson S (1990) Autonomic nervous control of blood pressure and heart rate during hypoxia in the cod, *Gadus morhua* 160:287
Fuchs JL (1983) Effects of pinealectomy and subsequent melatonin implants on activity rhythms in the house finch (*Carpodacus mexicanus*) (A) 153:413
Fujita I, see Satou M, et al
Full RJ, Tullis A (1990) Capacity for sustained terrestrial locomotion in an insect: Energetics, thermal dependence, and kinematics 160:573
Füller E, Kowalski U, Wiltschko R (1983) Orientation of homing pigeons: compass orientation vs piloting by familiar landmarks (A) 153:55
Fur PL de, see McMahon BR, et al
Fyhn HJ, see Hahnenkamp L

G

Gabbay S, see Katz U
Gabbott PA, see Meinardus-Hager G, et al
Gabrielsen GW, Mehlum F, Karlsen HE (1988) Thermoregulation in four species of arctic seabirds 157:703
Gabrielsen GW, see Grav JH, et al
Gäde G (1989) Characterisation of neuropeptides of the AKH/RPCH-family from corpora cardiaca of Coleoptera 159:589
Gäde G, see Baumann E, et al
Gäde G, see Carlsson K-H
Gäde G, see Meinardus-Hager G
Gäde G, see Meinardus-Hager G, et al
Gagelmann M, Güth K, Rüegg JC (1984) Stretch induced tension rise in a molluscan smooth muscle skinned by freeze drying 154:187
Gahm KH, see Chung JM, et al
Gailey DA, see Jackson FR, et al
Gaillard S, Rodeau JL (1987) Na^+/H^+ exchange in crayfish neurons: dependence on extracellular sodium and pH 157:435
Gaitanaki C, Papadopoulos A, Beis I (1990) Time-course of covalent modification of pyruvate kinase during anaerobiosis in the mantle muscle and the hepatopancreas of the limpet *Patella caerulea* (L.) 160:529
Gallivan GJ, Kanwisher JW, Best RC (1986) Heart rates and gas exchange in the Amazonian Manatee (*Trichechus inunguis*) in relation to diving 156:415
Galluser M, Raul F, Canguilhem B (1988) Adaptation of intestinal enzymes to seasonal and dietary changes in a hibernator: the European hamster (*Cricetus cricetus*) 158:143
Garby L, see Jensen FB, et al
Garcia-Herrero I, see Rodriguez-Cabello JC, et al
Gasser KW, Kirschner LB (1987) The inhibition and disposition of intestinal alkaline phosphatase 157:461
Gasser KW, Kirschner LB (1987) The response of alkaline phosphatase to osmoregulatory changes in the trout, *Salmo gairdneri* 157:469
Gatz RN, see Wood SC, et al
Gaus G, Kleinholz LH, Kegel G, Keller R (1990) Isolation and characterization of red-pigment-concentrating hormone (RPCH) from six crustacean species 160:373
Gautvik KM, see Rokkones E, et al
Gebauer G, see Techel D, et al
Gehrke PC, Fielder DR (1988) Effects of temperature and dissolved oxygen on heart rate, ventilation rate and oxygen consumption of spangled perch, *Leiopotherapon unicolor* (Günther 1859), (Percoidei, Teraponidae) 157:771
Geiser F (1986) Thermoregulation and torpor in the Kultarr, *Antechinomys laniger* (Marsupialia: Dasyuridae) 156:751
Geiser F (1988) Reduction of metabolism during hibernation and daily torpor in mammals and birds: temperature effect or physiological inhibition? 158:25
Geiser F, Baudinette RV (1985) The influence of temperature and photophase on daily torpor in *Sminthopsis macroura* (Dasyuridae: Marsupialia) 156:129
Geiser F, Baudinette RV (1987) Seasonality of torpor and thermoregulation in three dasyurid marsupials 157:335
Geiser F, McMurchie EJ (1984) Differences in the thermotropic behaviour of mitochondrial membrane respiratory enzymes from homeothermic and heterothermic endotherms 155:125
Geiser F, McMurchie EJ (1985) Arrhenius parameters of mitochondrial membrane respiratory enzymes in relation to thermoregulation in endotherms 155:711
Géloen A, see Robin J-P, et al
Geraerts WPM, With ND de, Vreugdenhil E, Hartingsveldt W van, Hogenes TM (1984) Studies on the physiological role of a partially purified small cardioactive neuropeptide of *Lymnaea stagnalis* 154:29
Gerday Ch, see Huch R, et al
Gerstberger R, Simon-Oppermann C, Kaul R (1984) Cephalic osmoreceptor control of salt gland activation and inhibition in the salt adapted duck 154:449
Gerstberger R, see Erbe K-H, et al
Gerstberger R, see Rettig R, et al
Gesser H, see Driedzic WR
Gesser H, see Hartmund T
Gesser H, see Hove-Madsen L
Gesser H, see Nielsen KE
Ghosh A, see Mahata SK, et al
Ghosh PK, see Goyal SP, et al
Ghosh PK, see Sasidharan TO, et al
Giardina B, see Brix O, et al
Gibbs A, Somero GN (1990) Pressure adaptation of teleost gill Na^+/K^+-adenosine triphosphatase: role of the lipid and protein moieties 160:431
Gil P, see Barja de Quiroga G, et al
Gilbert I, see Roberts B
Gilbert LI, see Birnbaum MJ
Gilbert LI, see Dorn A, et al
Gilbert LI, see Henrich VC, et al
Gilbert LI, see Richard DS, et al
Gilchrist I, see Shelton C, et al
Gill P, see Baudinette RV
Giordana B, see Parenti P, et al
Girard H, see Robin J-P, et al
Girard H, see Visschedijk AHJ, et al
Girard JP, see Perry SF, et al
Girault J-P, see Bückmann D, et al
Giuliano M, see Janssens PA
Glass ML, Boutilier RG, Heisler N (1983) Ventilatory control of arterial P_{O_2} in the

turtle *Chrysemys picta bellii*: effects of temperature and hypoxia 151:145
Glass ML, Ishimatsu A, Johansen K (1986) Responses of aerial ventilation to hypoxia and hypercapnia in *Channa argus*, an air-breathing fish 156:425
Glass ML, see Wood SC, et al
Gleeson M, see Barnas GM, et al
Gleeson M, see Brackenbury J
Gleeson TT (1985) Glycogen synthesis from lactate in skeletal muscle of the lizard *Dipsosaurus dorsalis* 156:277
Gleeson TT, Dalessio PM (1990) Lactate: a substrate for reptilian muscle gluconeogenesis following exhaustive exercise 160:331
Gnagey AL, Denlinger DL (1984) Photoperiodic induction of pupal diapause in the flesh fly, *Sarcophaga crassipalpis*: embryonic sensitivity 154:91
Gobin B, see Bernard J, et al
Goldberg JI, see Weiss S, et al
Goldinger JM, see Khalsa BDS, et al
Goldspink G, see Heap SP, et al
Goldspink G, see Sidell BD, et al
Goldstein DL, Braun EJ (1988) Contributions of the kidneys and intestines to water conservation, and plasma levels of antidiuretic hormone, during dehydration in house sparrows (*Passer domesticus*) 158:353
Goldstein J, see Kleinzeller A
Goldstein J, see Kleinzeller A, et al
Goldstein L, see King PA, et al
Goldstein L, see Wolff NA, et al
Goldsworthy GJ, see Wheeler CH, et al
Gomez T, see Badia P, et al
Gómez T, see Lorenzo A, et al
Gonzalez RJ, Dunson WA (1987) Adaptations of sodium balance to low pH in a sunfish (*Enneacanthus obesus*) from naturally acidic waters 157:555
Goolish EM, Burton RS (1988) Exposure to fluctuating salinity enhances free amino acid accumulation in *Tigriopus californicus* (Copepoda) 158:99
Gordon ER, see Grossbard ML, et al
Goyal SP, Ghosh PK, Sasidharan TO, Chand P (1988) Body water relations in two species of gerbil (*Tatera indica indica* and *Meriones hurrianae*) of the Indian desert 158:127
Goyal SP, see Sasidharan TO, et al
Graham JB, see Lai NC, et al
Graham MS, Fletcher GL (1985) On the low viscosity blood of two cold water, marine sculpins. A comparison with the winter flounder 155:455
Granzier HLM, see Akster HA, et al
Graszynski K, see Drews G
Graszynski K, see Krippeit-Drews P, et al
Graszynski K, see Onken H
Grav JH, Borch-Iohnsen B, Dahl HA, Gabrielsen GW, Steen JB (1988) Oxidative capacity of tissues contributing to thermogenesis in eider (*Somateria mollissima*) ducklings: changes associated with hatching 158:513
Gray DA, Erasmus T (1989) Control of renal and extrarenal salt and water excretion by plasma angiotensin II in the kelp gull (*Larus dominicanus*) 158:651
Gray DA, Hammel HT, Simon E (1986) Osmoregulatory effects of angiotensin II in a bird with salt glands (*Anas platyrhynchos*) 156:315
Gray DA, Simon E (1983) Mammalian and avian antidiuretic hormone: studies related to possible species variation in osmoregulatory systems 151:241
Gray DA, see Erbe K-H, et al
Greenaway P, see Morris S
Greenaway P, see Morris S, et al
Gregory PC, see Heller R, et al
Greive H, see Surholt B, et al
Grieshaber MK, see Kreutzer U, et al
Grieshaber MK, see Morris S, et al
Grieshaber MK, see Pörtner HO, et al
Grieshaber MK, see Zange J, et al
Grigg GC, Johansen K (1987) Cardiovascular dynamics in *Crocodylus porosus* breathing air and during voluntary aerobic dives 157:381
Grinich NP, Terwilliger RC, Terwilliger NB (1986) Oxygen equilibria and structural characteristics of the tetrameric and polymeric intracellular hemoglobins from the bivalve mollusc *Barbatia reeveana* 156:675
Groot JA, Albus H, Bakker R, Dekker K (1983) Changes in sugar transport and in electrophysiological characteristics of intestinal preparations of temperature-acclimated goldfish (*Carassius auratus* L.) 151:163
Groscolas R (1986) Changes in body mass, body temperature and plasma fuel levels during the natural breeding fast in male and female emperor penguins *Aptenodytes forsteri* 156:521
Grossbard ML, Boyer JL, Gordon ER (1987) The excretion pattern of biliverdin and bilirubin in bile of the small skate (*Raja erinacea*) 157:61
Grover ML, see Ahearn GA, et al
Grubb BR, Bentley PJ (1988) Relationship of transmural electrical parameters to the luminal Na concentration in the colon of the fowl (*Gallus domesticus*) 158:19
Grubb BR, Bentley PJ (1989) Avian colonic ion transport: effects of corticosterone and dexamethasone 159:131
Grubb BR, Bentley PJ (1990) Potassium transport across the intestines of the fowl *Gallus domesticus* 160:17
Grubb BR, Driscoll SM, Bentley PJ (1987) Electrical PD, short-circuit current and fluxes of Na and Cl across avian intestine 157:181
Gruschczyk B, Kamp G (1990) The shift from glycogenolysis to glycogen resynthesis after escape swimming: studies on the abdominal muscle of the shrimp, *Crangon crangon* 159:753
Guderley H, Hamel L, Lafond J (1983) Close resemblance between muscle pyruvate kinase from a primitive vertebrate, the river sturgeon *Acipenser fulvenscens*, and the ancestral type K isozyme 153:247
Guderley H, see Fournier P
Guillaume J, see Van Wormhoudt A, et al
Güth K, see Gagelmann M, et al
Guttas J, see Horwitz BA, et al

H

Habeeb P, see Hoffman RA, et al
Habersetzer J, Vogler B (1983) Discrimination of surface-structured targets by the echolocating bat *Myotis myotis* during flight (A) 152:275
Habibi H, Ince BW, Matty AJ (1983) Effects of 17-α-methyltestosterone and 17-β-oestradiol on intestinal transport and absorption of L-(^{14}C)-leucine in vitro in rainbow trout (*Salmo gairdneri*) 151:247
Haddad G, see Janský L, et al
Hadley NF, Quinlan MC (1989) Cuticular permeability of the black widow spider *Latrodectus hesperus* 159:243
Hadley NF, see Quinlan MC
Haftorn S, see Reinertsen RE
Hagedorn HH, see Williams Jr JC, et al
Hager AF, Hazel JR (1985) Changes in desaturase activity and the fatty acid composition of microsomal membranes from liver tissue of thermally-acclimating rainbow trout 156:35
Hahnenkamp L, Fyhn HJ (1985) The osmotic response of salmon louse, *Lepeophtheirus salmonis* (Copepoda: Caligidae), during the transition from sea water to fresh water 155:357
Haim A, Heth G, Avnon Z, Nevo E (1984) Adaptive physiological variation in nonshivering thermogenesis and its significance in speciation 154:145
Hale C, see Simmons JA, et al
Hall TR, Chadwick A, Woodhouse J, Harvey S (1985) Brain serotonin turnover and plasma prolactin and growth hormone concentrations during changes in osmotic balance in the domestic fowl 156:103
Hallonquist JD, see Lees JG, et al
Hamel L, see Guderley H, et al
Hamill NJ, McGinn MD, Horowitz JM (1989) Characteristics of auditory brainstem responses in ground squirrels 159:159
Hamill NJ, McGinn MD, Horowitz JM (1989) Auditory brainstem responses in ground squirrels arousing from hibernation 159:167
Hamilton J, see Horwitz BA, et al
Hamilton JM, see Schneider JE, et al
Hamilton N, see Brigham RM, et al
Hamilton PV, Ardizzoni SC, Penn JS (1983) Eye structure and optics in the intertidal snail, *Littorina irrorata* (A) 152:435
Hammel HT, see Gray DA, et al
Hammock BD, see Wing KD, et al
Hanaoka K, see Ogiso M, et al
Hand SC (1990) Heat dissipation during long-term anoxia in *Artemia franciscana* embryos: identification and fate of metabolic fuels 160:357
Hand SC, see Carpenter JF
Hannafin JA, Kinne R (1985) Active chloride transport in rabbit thick ascending limb of Henle's loop and elasmobranch rectal gland: chloride fluxes in isolated plasma membranes 155:415
Hanozet GM, see Parenti P, et al
Hanrahan SA, see Nicolson SW
Hansen DC, see Waite JH, et al

Hanstock CC, see McArthur MD, et al
Hanyu I, see Suzuki Y, et al
Happ GM, see Yaginuma T
Hara TJ, see Marui T, et al
Harada S, see Marui T, et al
Hardeland R, see Thorey I, et al
Harden Jones FR, Scholes P (1985) Gas secretion and resorption in the swimmbladder of the cod *Gadus morhua* 155:319
Harnau G, see Thorey I, et al
Harris RR, Bayliss D (1990) Osmoregulation in *Corophium curvispinum* (Crustacea: Amphipoda), a recent coloniser of freshwater. III. Evidence for adaptive changes in sodium regulation 160:85
Harris RR, see Bayliss D
Harris RR, see Taylor PM
Harrison JM (1989) Temperature effects on intra- and extracellular acid-base status in the American locust, *Schistocerca nitens* 158:763
Hart T, see Driedzic WR
Hartfelder K, Rembold H (1991) Caste-specific modulation of juvenile hormone III content and ecdysteroid titer in postembryonic development of the stingless bee, *Scaptotrigona postica depilis* 160:617
Hartingsveldt W van, see Geraerts WPM, et al
Hartmund T, Gesser H (1991) ATP, creatine phosphate, and mechanical activity in rainbow trout myocardium under inhibition of glycolysis and cell respiration 160:691
Harvey S, see Hall TR, et al
Hashimoto K, see Hwang GC, et al
Hatt H (1983) Temperature dependence of the response of the pyridine-sensitive units in the crayfish walking leg (A) 152:395
Hatt H (1983) Effect of temperature on the activity of the amino acid receptors in the crayfish walking leg (A) 152:405
Haupt J, Höhne G, Schwarz H, Chen B, Zhao W, Zhang Y (1988) Chinese whip scorpion using 2-ketones in defense secretion (Arachnida: Uropygi) 157:883
Haux C, see Björnsson BTh
Hayes JP (1989) Altitudinal and seasonal effects on aerobic metabolism of deer mice 159:453
Hayes TK, Keeley LL (1990) Structure-activity relationships on hyperglycemia by representatives of the adipokinetic/hyperglycemic hormone family in *Blaberus discoidalis* cockroaches 160:187
Hazel JR, Carpenter R (1985) Rapid changes in the phospholipid composition of gill membranes during thermal acclimation of the rainbow trout, *Salmo gairdneri* 155:597
Hazel JR, Zerba E (1986) Adaptation of biological membranes to temperature: molecular species compositions of phosphatidylcholine and phosphatidylethanolamine in mitochondrial and microsomal membranes of liver from thermally-acclimated rainbow trout 156:665
Hazel JR, see Hager AF
Hazel JR, see Livermore RC
Hazel JR, see Neas NP
Heap SP, Watt PW, Goldspink G (1987) Contractile properties of goldfish fin muscles following temperature acclimation 157:219
Hedrick MS, see Hillman SS, et al
Heinrich B (1984) Strategies of thermoregulation and foraging in two vespid wasps, *Dolichovespula maculata* and *Vespula vulgaris* 154:175
Heinrich B, Buchmann SL (1986) Thermoregulatory physiology of the carpenter bee, *Xylocopa varipuncta* 156:557
Heisler N, see Glass ML, et al
Heisler N, see Jensen FB, et al
Heisler N, see Pörtner HO, et al
Heldmaier G, Buchberger A (1985) Sources of heat during nonshivering thermogenesis in Djungarian hamsters: a dominant role of brown adipose tissue during cold adaptation 156:237
Heldmaier G, Seidl K (1985) Plasma free fatty acid levels during cold-induced and noradrenaline-induced nonshivering thermogenesis in the Djungarian hamster 155:679
Heldmaier G, see Klaus S, et al
Heldmaier G, see Mumm B, et al
Heldmaier G, see Rafael J, et al
Heldmaier G, see Ruf T, et al
Heldmaier G, see Saarela S
Heller R, Gregory PC, Engelhardt W v (1984) Pattern of motility and flow of digesta in the forestomach of the Llama (*Lama guanacoe* f. *glama*) 154:529
Hemelraad J, see Zwaan A de, et al
Hempleman SC, see Adamson TP, et al
Hennessey Jr JP, Siebenaller JF (1985) Pressure inactivation of tetrameric lactate dehydrogenase homologues of confamilial deep-living fishes 155:647
Hennessey TM, Saimi Y, Kung C (1983) A heat-induced depolarization of *Paramecium* and its relationship to thermal avoidance behavior (A) 153:39
Henrich VC, Pak MD, Gilbert LI (1987) Neural factors that stimulate ecdysteroid synthesis by the larval ring gland of *Drosophila melanogaster* 157:543
Hentschel H, see Elger E, et al
Hentschel H, see Elger M, et al
Hepburn HR, see Kurstjens SP, et al
Herd RM, see Dawson TJ, et al
Hergenröder R, Barth FG (1983) The release of attack and escape behavior by vibratory stimuli in a wandering spider (*Cupiennius salei* Keys.) (A) 152:347
Hergenröder R, Barth FG (1983) Vibratory signals and spider behavior: How do the sensory inputs from the eight legs interact in orientation? (A) 152:361
Hernández N, see Williams B, et al
Herreid II CF, Mooney SM (1984) Color change in exercising crabs: evidence for a hormone 154:207
Herrera FC, Rodríguez A, López I, Weitzmann H, Zanders IP (1986) Characterization of cell ion exchange in the sea anemone *Condylactis gigantea* 156:591
Hertel H (1983) Change of synapse frequency in certain photoreceptors of the honeybee after chromatic deprivation (A) 151:477
Hess SD, see Uglem GL, et al
Heth G, see Haim A, et al
Hew CL, Slaughter D, Joshi SB, Fletcher GL, Ananthanarayanan VS (1984) Antifreeze polypeptides from the Newfoundland ocean pout, *Macrozoarces americanus*: presence of multiple and compositionally diverse components 155:81
Hiaasen SO, see Lickey ME, et al
Hilbich C, see Stangier J, et al
Hilbig R, see Rahmann H
Hildebrand E, Dryl S (1983) Dependence of ciliary reversal in *Paramecium* on extracellular Ca^{2+} concentration (A) 152:385
Hildebrandt J-P, Zerbst-Boroffka I (1988) Effect of salt and volume loading on the circulation in the leech, *Hirudo medicinalis* L. 158:553
Hill KG (1983) The physiology of locust auditory receptors. I. Discrete depolarizations of receptor cells (A) 152:475
Hill KG (1983) The physiology of locust auditory receptors. II. Membrane potentials associated with the response of the receptor cell (A) 152:483
Hill KG, see Oldfield BP
Hill RB, see Huddart H
Hill RB, see Huddart H, et al
Hillman SS (1984) Inotropic influence of dehydration and hyperosmolal solutions on amphibian cardiac muscle 154:325
Hillman SS, Withers PC (1988) The hemodynamic consequences of hemorrhage and hypernatremia in two amphibians 157:807
Hillman SS, Withers PC, Hedrick MS, Kimmel PB (1985) The effects of erythrocythemia on blood viscosity, maximal systemic oxygen transport capacity and maximal rates of oxygen consumption in an amphibian 155:577
Hillman SS, see Withers PC
Hinssen H, see D'Haese J
Hinterleitner S, see Wieser W, et al
Hirano T, see Moriyama S, et al
Hirano T, see Ogasawara T
Hirano T, see Sakamoto T, et al
Hirsch-Kauffmann M, see Burtscher HJ, et al
Hirth KD, Biesel W, Nachtigall W (1987) Pigeon flight in a wind tunnel. III. Regulation of body temperature 157:111
Hiruma K, Matsumoto S, Isogai A, Suzuki A (1984) Control of ommochrome synthesis by both juvenile hormone and melanization hormone in the cabbage armyworm, *Mamestra brassicae* 154:13
Hiruma K, Riddiford LM, Hopkins TL, Morgan TD (1985) Roles of Dopa decarboxylase and phenoloxidase in the melanization of the tobacco hornworm and their control by 20-hydroxyecdysone 155:659
Hisada M, see Nagayama T, et al
Hõbe H, McMahon BR (1988) Mechanisms of acid-base and ionoregulation in White Suckers (*Catostomus commersoni*) in natural soft water. II. Exposure to a fluctuating ambient pH regime 158:67
Hõbe H, Wood CM, McMahon BR (1984) Mechanisms of acid-base and ionoregulation in white suckers (*Catostomus commersoni*) in natural soft water. I. Acute exposure to low ambient pH 154:35
Hõbe H, Wood CM, McMahon BR (1984) Mechanisms of acid-base and ionoregulation in white suckers (*Catostomus commer-*

soni) in natural soft water. I. Acute exposure to low ambient pH (Erratum) 154:329
Hoffman RA, Habeeb P, Buzzell GR (1990) Further studies on the regulation of the Harderian glands of golden hamsters by the thyroid gland 160:269
Hoffman RA, Johnson LB, Vaughan MK, Reiter RJ (1989) Interaction of Harderian glands, illumination, and temperature on thyroid hormones in golden hamsters 158:697
Hoffman RA, Wertz P, Habeeb P (1989) Harderian glands of golden hamsters: morphological and biochemical responses to thyroid hormones 159:293
Hoffmann A, see Cordeiro de Sousa MB
Hoffmann B, Nagel I, Clauss W (1990) Aldosterone regulates paracellular pathway resistance in rabbit distal colon 160:381
Hogenes TM, see Geraerts WPM, et al
Höglund LB, see Dimberg K
Höhne G, see Haupt J, et al
Hoint BD, see Lai NC, et al
Holmgren S, see Lundin K
Holsclaw III DS, see Chappell MA
Hommel C, see Surholt B, et al
Hong SK, see Khalsa BDS, et al
Hoo-Paris R, see Florant GL, et al
Hopkins TL, see Czapla TH, et al
Hopkins TL, see Hiruma K, et al
Hopkins TL, see Krueger RA, et al
Hoppeler H, Lindstedt SL, Uhlmann E, Niesel A, Cruz-Orive LM, Weibel ER (1984) Oxygen consumption and the composition of skeletal muscle tissue after training and inactivation in the European woodmouse (*Apodemus sylvaticus*) 155:51
Horn E, see Rayer B, et al
Horowitz JM, see Hamill NJ, et al
Horseman ND, Will CL (1984) Characterization of lipid storage associated proteins induced in crop tissue by prolactin 154:237
Horst MN (1990) Isolation of a crustacean N-acetyl-D-glucosamine-1-phosphate transferase and its activation by phospholipids 159:777
Horwath KL, Duman JG (1983) Preparatory adaptations for winter survival in the cold hardy beetles, *Dendroides canadensis* and *Dendroides concolor* 151:225
Horwath KL, Duman JG (1983) Induction of antifreeze protein production by juvenile hormone in larvae of the beetle, *Dendroides canadensis* 151:233
Horwitz BA, Clark SD, Hamilton J, Guttas J (1984) Effect of cold acclimation on Na^+/K^+ transport in hamster liver cells 154:159
Houlihan DF, Duthie G, Smith PJ, Wells MJ, Wells J (1986) Ventilation and circulation during exercise in *Octopus vulgaris* 156:683
Houlihan DF, see Sell D
Hove-Madsen L, Gesser H (1989) Force frequency relation in the myocardium of rainbow trout. Effects of K^+ and adrenaline 159:61
Howland HC, see Murphy CJ
Hoy R, see Moiseff A
Huch R, D'Haese J, Gerday Ch (1988) A soluble calcium-binding protein from the terrestrial annelid *Lumbricus terrestris* L. 158:325
Huddart H, Battram JC (1984) Monoamines as modulators of nerve-evoked fast twitches and K-induced contracture tension in skeletal muscle of the common shore crab, *Carcinus maenas* 154:503
Huddart H, Brooks DD, Hill RB, Lennard R (1990) Diversity of mechanical responses and their possible underlying mechanisms in the proboscis muscles of *Busycon canaliculatum* 159:717
Huddart H, Brooks DD, Lennard R, Hill RB (1990) Unusual responses of proboscis muscles of *Busycon canaliculatum* to some calcium antagonist agents 159:727
Huddart H, Hill RB (1988) Electromechanical uncoupling in a molluscan muscle examined by the sucrose gap technique. The effect of calcium antagonist and agonist agents 158:501
Huddart H, see Lennard R
Hudson DJ, see Lickey ME, et al
Huebers E, see Huebers HA, et al
Huebers HA, Huebers E, Finch CA, Webb BA, Truman JW, Riddiford LM, Martin AW, Massover WH (1988) Iron binding proteins and their roles in the tobacco hornworm, *Manduca sexta* (L.) 158:291
Huey RB, see Bennett AF, et al
Hughes MR (1987) Effect of blood removal and infusion on gull salt gland secretion 157:261
Hulbert AJ, see Else PL
Humbert W, see Simonneaux V, et al
Hume ID, see Chilcott MJ, et al
Hume ID, see Cork SJ
Hume ID, see Cork SJ, et al
Hume ID, see Foley WJ
Hume ID, see Rübsamen K, et al
Hume ID, see Rübsamen U, et al
Hume ID, see White RG, et al
Huntley AC, see Castellini MA, et al
Hwang GC, Watabe S, Hashimoto K (1990) Changes in carp myosin ATPase induced by temperature acclimation 160:233
Hyatt AD, see Marshall AT, et al
Hyde DA, Moon TW, Perry SF (1987) Physiological consequences of prolonged aerial exposure in the American eel, *Anguilla rostrata*: blood respiratory and acid-base status 157:635
Hyde DA, Perry SF (1990) Absence of adrenergic red cell pH and oxygen content regulation in American eel (*Anguilla rostrata*) during hypercapnic acidosis in vivo and in vitro 159:687
Hyodo S, Kato Y, Ono M, Urano A (1991) Cloning and sequence analyses of cDNAs encoding vasotocin and isotocin precursors of chum salmon, *Oncorhynchus keta*: evolutionary relationships of neurohypophysial hormone precursors 160:601

I

Ianuzzo CD, see Brigham RM, et al
Ichikawa M, see Satou M, et al
Ince BW, see Habibi H, et al
Indrasith LS, Sasaki T, Yaginuma T, Yamashita O (1988) The occurrence of a premature form of egg-specific protein in vitellogenic follicles of *Bombyx mori* 158:1
Intaglietta M, see Rettig R, et al
Iriki M, see Nagai M
Ishimatsu A, see Glass ML, et al
Isogai A, see Hiruma K, et al

J

Jackson DC, see Yee Jr HF
Jackson FR, Gailey DA, Siegel RW (1983) Biological rhythm mutations affect an experience-dependent modification of male courtship behavior in *Drosophila melanogaster* (A) 151:545
Jacob TJC, Duncan G (1984) A comparative study of the membrane permeability properties of amphibian and cephalopod mollusc lenses 154:333
Jallageas M, Mas N, Assenmacher I (1989) Further demonstration of the ambient temperature dependence of the annual biological cycles in the edible dormouse, *Glis glis* 159:333
Janský L, Haddad G, Kahlerová Z, Nedoma J (1984) Effect of external factors on hibernation of golden hamsters 154:427
Janský L, Haddad G, Pospíšilová D, Dvořák P (1986) Effect of external factors on gonadal activity and body mass of male golden hamsters (*Mesocricetus auratus*) 156:717
Janssens PA, Giuliano M (1989) Hormonal regulation of hepatic glycogenolysis in *Amphibolurus nuchalis*, the western netted dragon: an in vitro study 159:323
Janssens PA, see Wilkes GE
Jarvis JUM, see Buffenstein R, et al
Jastorff B, see Techel D, et al
Jegla TC, Ruland C, Kegel G, Keller R (1983) The role of the Y-organ and cephalic gland in ecdysteroid production and the control of molting in the crayfish, *Orconectes limosus* 152:91
Jen PH-S, see McCarty JK
Jenkin CR, see Coombe DR, et al
Jensen FB (1987) Influences of exercise-stress and adrenaline upon intra- and extracellular acid-base status, electrolyte composition and respiratory properties of blood in tench (*Tinca tinca*) at different seasons 157:51
Jensen FB, Andersen NA, Heisler N (1987) Effects of nitrite exposure on blood respiratory properties, acid-base and electrolyte regulation in the carp (*Cyprinus carpio*) 157:533
Jensen FB, Boiden Pedersen J, Garby L (1990) A three-state MWC analysis of oxygenation in tench (*Tinca tinca*) hemoglobin 160:407
Jensen FB, Malte H (1990) Acid-base and electrolyte regulation, and haemolymph gas transport in crayfish, *Astacus astacus*, exposed to soft, acid water with and without aluminium 160:483
Jensen FB, Weber RE (1985) Kinetics of the acclimational responses of tench to combined hypoxia and hypercapnia. I. Respiratory responses 156:197
Jensen FB, Weber RE (1985) Kinetics of the

acclimational responses of tench to combined hypoxia and hypercapnia. II. Extra- and intracellular acid-base status in the blood 156:205
Jensen FB, Weber RE (1987) Thermodynamic analysis of precisely measured oxygen equilibria of tench (*Tinca tinca*) hemoglobin and their dependence on ATP and protons 157:137
Jensen FB, see Weber RE, et al
Jensen RA, Morse DE (1988) The bioadhesive of *Phragmatopoma californica* tubes: a silk-like cement containing L-DOPA 158:317
Johansen K, see Glass ML, et al
Johansen K, see Grigg GC
Johansen K, see Midtgård U, et al
Johansson MW, Söderhäll K (1985) Exocytosis of the prophenoloxidase activating system from crayfish haemocytes 156:175
John-Alder HB (1984) Seasonal variations in activity, aerobic energetic capacities, and plasma thyroid hormones (T3 and T4) in an iguanid lizard 154:409
John-Alder HB, Bennett AF (1987) Thermal adaptations in lizard muscle function 157:241
John-Alder HB, Lowe CH, Bennett AF (1983) Thermal dependence of locomotory energetics and aerobic capacity of the Gila monster (*Heloderma suspectum*) 151:119
John-Alder HB, see Bennett AF
John-Alder HB, see Bennett AF, et al
Johnson BA (1987) Structure and function of the hemocyanin from a semi-terrestrial crab, *Ocypode quadrata* 157:501
Johnson LB, see Hoffman RA, et al
Johnston IA, Brill R (1984) Thermal dependence of contractile properties of single skinned muscle fibres from Antarctic and various warm water marine fishes including Skipjack Tuna (*Katsuwonus pelamis*) and Kawakawa (*Euthynnus affinis*) 155:63
Johnston IA, see Altringham JD
Johnston IA, see Crockford T
Johnston IA, see Sidell BD, et al
Jones D (1985) The endocrine basis for developmentally stationary prepupae in larvae of *Trichoplusia ni* pseudoparasitized by *Chelonus insularis* 155:235
Jones D (1985) Parasite regulation of host insect metamorphosis: a new form of regulation in pseudoparasitized larvae of *Trichoplusia ni* 155:583
Jones D (1985) The endocrine basis for developmentally stationary prepupae in larvae of *Trichoplusia ni* pseudoparasitized by *Chelonus insularis* (Erratum) 155:645
Jones D, see Wing KD, et al
Jones DR, see Mangalam HJ
Jones G, see Wing KD, et al
Jones JD, see Ahlquist DA, et al
Josephson RK, see Young D
Joshi SB, see Hew CL, et al
Jungmann R, Rothe U, Nachtigall W (1988) Flight of the honey bee. I. Thorax surface temperature and thermoregulation during tethered flight 158:711
Jungmann R, see Nachtigall W, et al
Jungreis AM, see Cooper PD
Jungreis AM, see Cornell JC
Jürgens KD, Pietschmann M, Yamaguchi K, Kleinschmidt T (1988) Oxygen binding properties, capillary densities and heart weights in high altitude camelids 158:469
Jürgens KD, see Yamaguchi K, et al

K

Kageyama T, see Ogiso M, et al
Kahle G, see Meinertzhagen IA, et al
Kahlerová Z, see Janský L, et al
Kaloyianni M, see Lazaridou-Dimitriadou M
Kaloyianni-Dimitriades M, Beis I (1984) Studies on the energy metabolism of *Rana ridibunda* erythrocytes 155:109
Kam Y-C, Ackerman RA (1990) The effect of incubation media on the water exchange of snapping turtle (*Chelydra serpentina*) eggs and hatchlings 160:317
Kamau JMZ, Maloiy GMO (1983) Changes in thyroxine, triiodothyronine and metabolic rate in the dik-dik antelope (*Rhynchotragus kirkii*): effects of temperature and dehydration 152:23
Kammer AE, see Kinnamon SC
Kamp G, Wegener G (1985) Regulatory features of glycogen phosphorylase from frog brain (*Rana temporaria*) 156:77
Kamp G, see Gruschczyk B
Kanwisher JW, see Gallivan GJ, et al
Kapoulas VM, see Tsoukatos DC
Karasov WH, Diamond JM (1983) A simple method for measuring intestinal solute uptake in vitro 152:105
Karasov WH, Petrossian E, Rosenberg L, Diamond JM (1986) How do food passage rate and assimilation differ between herbivorous lizards and nonruminant mammals? 156:599
Karlsen HE, see Gabrielsen GW, et al
Kasahara Y, see Marui T, et al
Kasschau MR, Skisak CM, Cook JP, Mills WR (1984) β-Alanine metabolism and high salinity stress in the sea anemone, *Bunodosoma cavernata* 154:181
Kato Y, see Hyodo S, et al
Katz U, Gabbay S (1986) Water retention and plasma and urine composition in toads (*Bufo viridis* Laur.) under burrowing conditions 156:735
Kaul R, Shoemaker VH (1989) Control of thermoregulatory evaporation in the waterproof treefrog *Chiromantis xerampelina* 158:643
Kaul R, see Gerstberger R, et al
Kaul R, see Mumm B, et al
Kaune R, see Elger M, et al
Kauschke E, Mohrig W (1987) Cytotoxic activity in the coelomic fluid of the annelid *Eisenia foetida* Sav. 157:77
Kavaliers M (1991) Day-night rhythms in opiate modulation of body temperature in male Japanese quail 160:699
Kawasaki M, Aoki K (1983) Visual responses recorded from the optic tectum of Japanese dace, *Tribolodon hakonensis* (A) 152:147
Kawauchi H, see Moriyama S, et al
Keeley LL, see Chung J-S
Keeley LL, see Hayes TK
Keenan CL, see Davis JP, et al
Kegel G, see Gaus G, et al
Kegel G, see Jegla TC, et al
Keller L, see Passera L
Keller R, see Gaus G, et al
Keller R, see Jegla TC, et al
Keller R, see Stangier J, et al
Keller R, see Webster SG
Kelner KL, Nagle GT, Painter SD, Blankenship JE (1984) Biosynthesis of peptides in the atrial gland of *Aplysia californica* 154:435
Kelner KL, see Nagle GT, et al
Kennedy D, see Fricke RA
Kent J, Koban M, Prosser CL (1988) Cold-acclimation-induced protein hypertrophy in channel catfish and green sunfish 158:185
Key SA, see May SA, et al
Khalsa BDS, Goldinger JM, Hong SK (1984) Renal transport of various organic anions in *Necturus* 154:119
Kick SA, see Simmons JA, et al
Kiessling K-H, Lundström K, Andersson I, Rydberg A (1987) Changes in neck muscles in Swedish reindeer bucks during rutting season 157:45
Kiessling K-H, see Lundgren BO
Kilgore Jr DL, see Burgoon DA, et al
Kimmel PB, see Hillman SS, et al
Kimsey LS, see Morgan KR, et al
King JR, see Webster MD
King PA, Kinne R, Goldstein L (1985) Taurine transport by brush border membrane vesicles isolated from the flounder kidney 155:185
Kinkead R, Perry SF (1990) An investigation of the role of circulating catecholamines in the control of ventilation during acute moderate hypoxia in rainbow trout (*Oncorhynchus mykiss*) 160:441
Kinnamon SC, Kammer AE (1983) Neural control of ventilatory movements in the aquatic insect *Corydalus cornutus*: the motor pattern (A) 153:543
Kinne R, see Flöge J, et al
Kinne R, see Hannafin JA
Kinne R, see King PA, et al
Kinne R, see Wolff NA, et al
Kinne RKH, see Bevan C, et al
Kinne-Saffran E, see Bevan C, et al
Kirsch R, see Simonneaux V, et al
Kirschner LB, see Gasser KW
Klaus S, Heldmaier G, Ricquier D (1988) Seasonal acclimation of bank voles and wood mice: nonshivering thermogenesis and thermogenic properties of brown adipose tissue mitochondria 158:157
Klee A, see Wegener G, et al
Kleindienst H-U, Wohlers DW, Larsen ON (1983) Tympanal membrane motion is necessary for hearing in crickets (A) 151:397
Kleinholz LH, see Gaus G, et al
Kleinschmidt T, see Jürgens KD, et al
Kleinzeller A, Forrest Jr JN, Cha C-J, Goldstein J, Booz G (1985) Cell solute composition and potassium effects in slices of the rectal gland of the dogfish shark (*Squalus acanthias*) 155:145
Kleinzeller A, Goldstein J (1984) Effect of anisotonic media on cell volume and electrolyte fluxes in slices of the dogfish (*Squalus acanthias*) rectal gland 154:561
Klimkewitz M, see Meyer R, et al

Klingenspor M, see Ruf T, et al
Klocker H, see Burtscher HJ, et al
Knels U, Bretting H (1989) Comparative structural analysis of snail galactans by a radioimmunoassay to elucidate species-specific determinants 159:629
Knudsen J, see Famme P
Koban M, see Kent J, et al
Kobayashi H, see Takei Y, et al
Kobayashi M, see Suzuki Y, et al
Kobayashi M, see Yaginuma T, et al
Kobelt F, see Schmuck R, et al
Kohler W, see Techel D, et al
Komuniecki R, see Rioux A
Kooyman GL, Castellini MA, Davis RW, Maue RA (1983) Aerobic diving limits of immature Weddell seals 151:171
Kooyman GL, see Davis RW, et al
Kooyman GL, see Ponganis PJ, et al
Kooyman GL, see Williams TM, et al
Korochkin LI, see Rauschenbach IYu, et al
Korsgaard B, Østergaard Andersen F (1985) Embryonic nutrition, growth and energetics in *Zoarces viviparus* L. as indication of a maternal-fetal trophic relationship 155:437
Kowalski U, see Füller E, et al
Kramer KJ, see Czapla TH, et al
Kramer KJ, see Krueger RA, et al
Krattenmacher R, Voigt R, Clauss W (1990) Ca-sensitive sodium absorption in the colon of *Xenopus laevis* 160:161
Kretzman MB, see Castellini JM, et al
Kreutzer U, Siegmund BR, Grieshaber MK (1989) Parameters controlling opine formation during muscular activity and environmental hypoxia 159:617
Krieger J, see Raming K, et al
Krippeit-Drews P, Drews G, Graszynski K (1989) Effects of ion substitution on the transepithelial potential difference of the gills of the fiddler crab *Uca tangeri*: evidence for a H^+-pump in the apical membrane 159:43
Krog JO, see Steen JB, et al
Krontiris-Litowitz JK, Cooper BF, Walters ET (1989) Humoral factors released during trauma of *Aplysia* body wall. I. Body wall contraction, cardiac modulation, and central reflex suppression 159:211
Krontiris-Litowitz JK, see Cooper BF, et al
Krueger RA, Broce AB, Hopkins TL, Kramer KJ (1988) Calcium transport from Malpighian tubules to puparial cuticle of *Musca autumnalis* 158:413
Kubota Y, Shima A (1991) Comparative study of embryonic thermoresistance of two inbred strains of the medaka (*Oryzias latipes*) 160:621
Kuchel O, see Racz K, et al
Kuiper JW, see Otzen H
Kukal O, Denlinger DL, Lee RE (1991) Developmental and metabolic changes induced by anoxia in diapausing and non-diapausing flesh fly pupae 160:683
Kukal O, Duman JG, Serianni AS (1989) Cold-induced mitochondrial degradation and cryoprotectant synthesis in freeze-tolerant arctic caterpillars 158:661
Kukal O, Serianni AS, Duman JG (1988) Glycerol metabolism in a freeze-tolerant arctic insect: an in vivo ^{13}C NMR study 158:175
Kung C, see Hennessey TM, et al
Kunigelis SC, Saleuddin ASM (1985) Studies on the in vitro formation of periostracum in *Helisoma duryi*: the influence of brain 155:177
Kuramoto T, Ebara A (1988) Combined effects of 5-hydroxytryptamine and filling pressure on the isolated heart of the lobster, *Panulirus japonicus* 158:403
Kurstjens SP, Hepburn HR, Schoening FRL, Davidson BC (1985) The conversion of wax scales into comb wax by African honeybees 156:95

L

Lac TH, see Vena VE, et al
Lafond J, see Guderley H, et al
Lafont R, see Bückmann D, et al
Lahlou B, see Bianchini L, et al
Lai NC, Shabetai R, Graham JB, Hoint BD, Sunnerhagen KS, Bhargava V (1990) Cardiac function of the leopard shark, *Triakis semifasciata* 160:259
Lampert GJ, see Machin J
Lamprecht I, see Fahrenholz L, et al
Larsen ON, see Kleindienst H-U, et al
Laurén DJ, McDonald DG (1985) Effects of copper on branchial ionoregulation in the rainbow trout, *Salmo gairdneri* Richardson. Modulation by water hardness and pH 155:635
Laval-Martin DL, see Malinowski JR, et al
Laverty G (1983) Renal transport of phosphate during phosphate loading in the fresh-water turtle 152:117
Laverty G, Wideman Jr RF (1989) Sodium excretion rates and renal responses to acute salt loading in the European starling 159:401
Lawrence BD, see Simmons JA, et al
Laxmyr L (1985) Tyrosine hydroxylase activity in the central nervous system of the crayfish, *Pacifastacus leniusculus* (Crustacea, Decapoda) 155:603
Lazaridou-Dimitriadou M, Kaloyianni M (1989) Age, seasonal and diel variations of the uricolytic enzymatic system in the snails *Xeropicta arenosa* (Ziegler) and *Cernuella virgata* (Da Costa) 159:115
Lazaridou-Dimitriadou M, see Bailey SER
Lazou A, Beis I (1986) The role of adenosine in the isolated *Rana ridibunda* heart 156:839
Lazou A, Michaelidis B, Beis Is (1989) Evidence for glycolytic enzyme binding during anaerobiosis of the foot muscle of *Patella cerulea* (L.) 158:771
Le Gall JY, see Raffin JP, et al
Le Maho Y, see Le Ninan F, et al
Le Maho Y, see Robin J-P, et al
Le Ninan F, Cherel Y, Robin J-P, Leloup J, Le Maho Y (1988) Early changes in plasma hormones and metabolites during fasting in king penguin chicks 158:395
Lee RE, see Chen C-P, et al
Lee RE, see Kukal O, et al
Lee YC, see Chiu KW
Lees JG, Hallonquist JD, Mrosovsky N (1983) Differential effects of dark pulses on the two components of split circadian activity rhythms in golden hamsters (A) 153:123
Lei Xu, Neven LG, Duman JG (1990) Hormonal control of hemolymph lipoprotein ice nucleators in overwintering freeze-susceptible larvae of the stag beetle *Ceruchus piceus*: adipokinetic hormone and juvenile hormone 160:51
Leidescher T, see Schartau W
Leloup J, see Le Ninan F, et al
Leloup J, see Luze A de, et al
Lennard R, Huddart H (1989) Purinergic modulation of cardiac activity in the flounder during hypoxic stress 159:105
Lennard R, see Huddart H, et al
Lenz CJ, see Dillwith JW, et al
Leon-Velarde F, see Carey C, et al
Lewis B, see Boyd P
Lhonoré J, see Bouthier A
Lickey ME, Hudson DJ, Hiaasen SO (1983) Circadian organization in *Aplysia*: relation between locomotor rhythm and eye rhythms after cutting both, one or neither optic nerves (A) 153:133
Liebsch M, Becker W (1990) Comparative glucose tolerance studies in the freshwater snail *Biomphalaria glabrata*: influence of starvation and infection with the trematode *Schistosoma mansoni* 160:41
Lieke E, see Menzel R
Lighton JRB (1987) Cost of tokking: the energetics of substrate communication in the tok-tok beetle, *Psammodes striatus* 157:11
Lighton JRB, see Bartholomew GA
Lighton JRB, see Bartholomew GA, et al
Lillywhite HB, Ackermann RA, Palacios L (1983) Cardiorespiratory responses of snakes to experimental hemorrhage 152:5
Lillywhite HB, see Donald JA, et al
Lillywhite HB, see Smits AW
Lim BC, McArdle HJ, Morgan EH (1987) Transferrin-receptor interaction and iron uptake by reticulocytes of vertebrate animals – a comparative study 157:363
Lim BC, Morgan EH (1985) Transferrin endocytosis and iron uptake by developing erythroid cells in the chicken (*Gallus domesticus*) 155:201
Lima AAB, Meirelles NC, Airoldi LPS, Focesi Jr A (1985) Allosteric effect of protons and adenosine triphosphate on hemoglobins from aquatic amphibia 155:353
Lindstedt SL, see Hoppeler H, et al
Linsenmair KE, see Schmuck R, et al
Linzen B (1987) Editorial 157:701
Linzen B (1987) *In memoriam* Kjell Johansen 157:403
Linzen B, see Autrum H
Linzen B, see Paul R, et al
Little KT, see Waite JH, et al
Livermore RC, Hazel JR (1988) Properties of microsomal acyl-CoA: lysophosphatidylcholine acyltransferase from liver of thermally-acclimated rainbow trout, *Salmo gairdneri* 158:363
Loftus R, see Corbière-Tichané G
Loftus R, see Tichy H
López I, see Herrera FC, et al

López-Torres M, Pérez-Campo R, Barja de Quiroga G (1991) Effect of natural ageing and antioxidant inhibition on liver antioxidant enzymes, glutathione system, peroxidation, and oxygen consumption in *Rana perezi* 160:655
López-Torres M, see Barja de Quiroga G, et al
Lorenzo A, Medina V, Badia P, Gómez T (1990) Effects of vasopressin on electrolyte transport in lizard intestine 159:745
Lorenzo A, see Badia P, et al
Loretz CA, see Dixon JM
Louw GN, see Bartholomew GA, et al
Love RM, see Black D
Low MG, see Neven LG, et al
Lowe CH, see John-Alder HB, et al
Lukashina NS, see Rauschenbach IYu, et al
Lukowiak K, see Weiss S, et al
Lundgren BO, Kiessling K-H (1988) Comparative aspects of fibre types, areas, and capillary supply in the pectoralis muscle of some passerine birds with differing migratory behaviour 158:165
Lundin K, Holmgren S (1984) Vasoactive intestinal polypeptide-like immunoreactivity and effects of VIP in the swimbladder of the cod, *Gadus morhua* 154:627
Lundström K, see Kiessling K-H, et al
Lüthy IA, Segura ET, Lüthy VI, Charreau EH, Calandra RS (1985) Prolactin binding sites in the brain and kidneys of the toad, *Bufo arenarum* Hensel 155:611
Lüthy VI, see Lüthy IA, et al
Luze A de, Leloup J, Olivereau M (1984) Effects of ovine prolactin on iodide metabolism and thyroid activity in the eel 154:199
Lyngstadaas SP, Risnes S, Nordbø H, Flønes AG (1990) Amelogenin gene similarity in vertebrates: DNA sequences encoding amelogenin seem to be conserved during evolution 160:469

M

MacArthur RA (1986) Effects of CO_2 inhalation on acid-base balance and thermal recovery following cold water dives by the muskrat (*Ondatra zibethicus*) 156:339
MacArthur RA (1990) Seasonal changes in the oxygen storage capacity and aerobic dive limits of the muskrat (*Ondatra zibethicus*) 160:593
Macdonald AG, see Shelton C, et al
Macey DJ, Smalley SR, Potter IC, Cake MH (1985) The relationship between total nonhaem, ferritin and haemosiderin iron in larvae of Southern Hemisphere lampreys (*Geotria australis* and *Mordacia mordax*) 156:269
Machin J, Lampert GJ (1990) Evidence for water-organized structure in the cuticular water barrier of the American cockroach, *Periplaneta americana* 159:739
Mackay WC, see Schwalme K
MacKay WP, Sassaman CA (1984) Paradoxical acclimation and seasonal comparisons of oxygen consumption rates in three species of *Pogonomyrmex* harvester ants (Hymenoptera: Formicidae) 154:399
Maginniss LA (1985) Blood oxygen transport in the house sparrow, *Passer domesticus* 155:277
Mahata SK, Mandal A, Ghosh A (1988) Influence of age and splanchnic nerve on the action of melatonin in the adrenomedullary catecholamine content and blood glucose level in the avian group 158:601
Maier L, Root TM, Seyfarth E-A (1987) Heterogeneity of spider leg muscle: Histochemistry and electrophysiology of identified fibers in the claw levator 157:285
Maksimovsky LF, see Rauschenbach IYu, et al
Malan A, Mioskowski E (1988) pH-temperature interactions on protein function and hibernation: GDP binding to brown adipose tissue mitochondria 158:487
Malan A, Mioskowski E, Calgari C (1988) Time-course of blood acid-base state during arousal from hibernation in the European hamster 158:495
Malan A, Rodeau JL, Daull F (1985) Intracellular pH in hibernation and respiratory acidosis in the European hamster 156:251
Malan A, see McArthur MD, et al
Male KB, Storey KB (1983) Tissue specific isozymes of glutamate dehydrogenase from the Japanese beetle, *Popillia japonica*: catabolic vs anabolic GDH's 151:199
Malinowski JR, Laval-Martin DL, Edmunds Jr LN (1985) Circadian oscillators, cell cycles, and singularities: light perturbations of the free-running rhythm of cell division in *Euglena* 155:257
Maloiy GMO, see Kamau JMZ
Malte H, see Jensen FB
Malvin GM (1985) Vascular resistance and vasoactivity of gills and pulmonary artery of the salamander, *Ambystoma tigrinum* 155:241
Malvin GM (1985) Adrenoceptor types in the respiratory vasculature of the salamander gill 155:591
Mandal A, see Mahata SK, et al
Mangalam HJ, Jones DR (1984) The effects of breathing different levels of O_2 and CO_2 on the diving responses of ducks (*Anas platyrhynchos*) and cormorants (*Phalacrocorax auritus*) 154:243
Mangum CP, see Dykens JA
Mangum CP, see Miller KI
Marchetti J, see Baddouri Kh, et al
Marder J, Raber P (1989) Beta-adrenergic control of trans-cutaneous evaporative cooling mechanisms in birds 159:97
Markl J, Winter S (1989) Subunit-specific monoclonal antibodies to tarantula hemocyanin, and a common epitope shared with calliphorin 159:139
Markl J, see Stöcker W, et al
Marsh RL, Bennett AF (1985) Thermal dependence of isotonic contractile properties of skeletal muscle and sprint performance of the lizard *Dipsosaurus dorsalis* 155:541
Marsh RL, Carey C, Dawson WR (1984) Substrate concentrations and turnover of plasma glucose during cold exposure in seasonally acclimatized house finches, *Carpodacus mexicanus* 154:469
Marshall AT (1989) Intracellular and luminal ion concentrations in sea turtle salt glands determined by x-ray microanalysis 159:609
Marshall AT, Cooper PD (1988) Secretory capacity of the lachrymal salt gland of hatchling sea turtles, *Chelonia mydas* 157:821
Marshall AT, Hyatt AD, Phillips JG, Condron RJ (1985) Isosmotic secretion in the avian nasal salt gland: X-ray microanalysis of luminal and intracellular ion distributions 156:213
Martelo M-J, see Zanders IP
Martin AW, see Huebers HA, et al
Marui T, Evans RE, Zielinski B, Hara TJ (1983) Gustatory responses of the rainbow trout (*Salmo gairdneri*) palate to amino acids and derivatives (A) 153:423
Marui T, Harada S, Kasahara Y (1983) Gustatory specificity for amino acids in the facial taste system of the carp, *Cyprinus carpio* L. (A) 153:299
Mas N, see Jallageas M, et al
Massabuau JC, Burtin B (1984) Regulation of oxygen consumption in the crayfish *Astacus leptodactylus* at different levels of oxygenation: role of peripheral O_2 chemoreception 155:43
Massabuau JC, Burtin B (1985) Ventilatory CO_2 reflex response in hypoxic crayfish *Astacus leptodactylus* acclimated to 20 °C 156:115
Massabuau J-C, Dejours P, Sakakibara Y (1984) Ventilatory CO_2 drive in the crayfish: influence of oxygen consumption level and water oxygenation 154:65
Massover WH, see Huebers HA, et al
Mathisen S, see Brix O, et al
Matić T (1983) Electrical inhibition in the retina of the butterfly *Papilio*. I. Four spectral types of photoreceptors (A) 152:169
Matsumoto S, see Hiruma K, et al
Matty AJ, see Habibi H, et al
Maue RA, see Kooyman GL, et al
Maxime V, Peyraud-Waitzenegger M, Claireaux G, Peyraud C (1990) Effects of rapid transfer from sea water to fresh water on respiratory variables, blood acid-base status and O_2 affinity of haemoglobin in Atlantic salmon (*Salmo salar* L.) 160:31
May SA, Baratz KH, Key SA, Degnan KJ (1984) Characterization of the adrenergic receptors regulating chloride secretion by the opercular epithelium 154:343
May SA, Degnan KJ (1985) Converging adrenergic and cholinergic mechanisms in the inhibition of Cl secretion in fish opercular epithelium 156:183
Mayes CR, see Follett BK, et al
May-Rautenberg B, see Bech C, et al
McArdle HJ, see Lim BC, et al
McArthur MD, Hanstock CC, Malan A, Wang LCH, Allen PS (1990) Skeletal muscle pH dynamics during arousal from hibernation measured by ^{31}P NMR spectroscopy 160:339
McCarty JK, Jen PH-S (1983) Bats reject clutter interference for moving targets more successfully than for stationary ones (A) 152:447
McClellan AD (1983) Higher order neurons in the cerebral ganglia of *Pleurobranchaea*

have diverse effects on buccal motor patterns (A) 153:533
McCloskey DI, see Courtice GP
McDonald DG, see Laurén DJ
McEnroe M, see Nikinmaa M, et al
McGhee RW, see Stout JF, et al
McGinn MD, see Hamill NJ, et al
McIntyre P, see Bryceson KP
McMahon BR, Burnett LE, Fur PL de (1984) Carbon dioxide excretion and carbonic anhydrase function in the Red Rock Crab *Cancer productus* 154:371
McMahon BR, see Hõbe H
McMahon BR, see Hõbe H, et al
McMahon BR, see Morris S, et al
McMahon BR, see Spicer JI
McMurchie EJ, see Geiser F
McWilliams PG, see Shephard KL
Medina V, see Lorenzo A, et al
Megela AL, Capranica RR (1983) A neural and behavioral study of auditory habituation in the bullfrog, *Rana catesbeiana* (A) 151:423
Megirian D, see Stahel CD, et al
Mehlum F, see Gabrielsen GW, et al
Meinardus-Hager G, Gabbott PA, Gäde G (1989) Regulatory steps of glycolysis during environmental anoxia and muscular work in the cockle, *Cardium tuberculatum*: control of low and high glycolytic flux 159:195
Meinardus-Hager G, Gäde G (1986) The separate function of D-lactate-, octopine-, and alanopine dehydrogenases in the foot muscle of the jumping cockle *Cardium tuberculatum* during anaerobiosis 156:873
Meinertzhagen IA, Menzel R, Kahle G (1983) The identification of spectral receptor types in the retina and lamina of the dragonfly *Sympetrum rubicundulum* (A) 151:295
Meinertzhagen IA, see Armett-Kibel C
Meirelles NC, see Lima AAB, et al
Melcher JC, see Armitage KB, et al
Menard J, see Baddouri Kh, et al
Mendiola P, De Costa J (1990) The effects of pH and temperature on the kinetic properties of skeletal muscle lactate dehydrogenase from anuran amphibians 160:105
Menzel R, Lieke E (1983) Antagonistic color effects in spatial vision of honeybees (A) 151:441
Menzel R, see Meinertzhagen IA, et al
Mercer AR, Erber J (1983) The effects of amines on evoked potentials recorded in the mushroom bodies of the bee brain (A) 151:469
Merker G, see Roth J, et al
Merkle S (1989) Sexual differences as adaptation to the different gender roles in the frog *Xenopus laevis* Daudin 159:473
Metcalfe JD, Butler PJ (1988) The effects of alpha- and beta-adrenergic receptor blockade on gas exchange in the dogfish (*Scyliorhinus canicula* L.) during normoxia and hypoxia 158:39
Meyer JH (1983) Steroid influences upon the discharge frequencies of a weakly electric fish (A) 153:29
Meyer JH, Bell CC (1983) Sensory gating by a corollary discharge mechanism (A) 151:401
Meyer JH, see Zakon HH
Meyer J-U, see Rettig R, et al
Meyer R, Becker W, Klimkewitz M (1986) Investigations on the ketone body metabolism in *Biomphalaria glabrata*: Influence of starvation and of infection with *Schistosoma mansoni* 156:563
Meyhöfer E, Morse MP, Robinson WE (1985) Podocytes in bivalve molluscs: Morphological evidence for ultrafiltration 156:151
Michaelidis B, Papadopoulos A, Beis I (1990) Effect of anoxia on the kinetic properties of pyruvate kinase and phosphofructokinase, and on glycogen phosphorylase activity in marine worms and earth worms 160:201
Michaelidis B, see Lazou A, et al
Midtgård U, Arad Z, Skadhauge E (1983) The *rete ophthalmicum* and the relation of its size to the body-to-brain temperature difference in the fowl (*Gallus domesticus*) 153:241
Midtgård U, Sejrsen P, Johansen K (1985) Blood flow in the brood patch of Bantam hens: evidence of cold vasodilatation 155:703
Midtgård U, see Arad Z, et al
Mihalik SJ, Rhead WJ (1991) Species variation in organellar location and activity of L-pipecolic acid oxidation in mammals 160:671
Miller K, see Packard GC, et al
Miller KI, Mangum CP (1988) An investigation of the nature of Bohr, Root, and Haldane effects in *Octopus dofleini* hemocyanin 158:547
Milligan CL, Farrell TP (1986) Extracellular and intracellular acid-base status following strenuous activity in the sea raven (*Hemitripterus americanus*) 156:583
Mills WR, see Kasschau MR, et al
Milsom WK, see Butler PJ, et al
Minke B (1983) The *trp* is a *Drosophila* mutant sensitive to developmental temperature (A) 151:483
Mioskowski E, see Malan A
Mioskowski E, see Malan A, et al
Miralto A, see Agnisola C, et al
Moed PJ, see Nuboer JFW
Moerland TS, see Sidell BD, et al
Mohrig W, see Ehlers D, et al
Mohrig W, see Kauschke E
Moiseff A, Hoy R (1983) Sensitivity to ultrasound in an identified auditory interneuron in the cricket: a possible neural link to phonotactic behavior (A) 152:155
Mommsen TP (1984) Biochemical characterization of the rainbow trout gill 154:191
Monge C, see Carey C, et al
Moon TW, see Ballantyne JS
Moon TW, see Hyde DA, et al
Mooney SM, see Herreid II CF
Moore MC, Schwabl H, Farner DS (1983) Biochronometry of testicular regression in white-crowned sparrows (*Zonotrichia leucophrys gambelii*) (A) 153:489
Moore SA, see Chilcott MJ, et al
Mordue W, see Morgan PJ
Moreno M, see Esteban S, et al
Morgan EH, see Lim BC
Morgan EH, see Lim BC, et al
Morgan EH, see Sorokin LM
Morgan KR, Shelly TE, Kimsey LS (1985) Body temperature regulation, energy metabolism, and foraging in light-seeking and shade-seeking robber flies 155:561
Morgan KR, see Bucher TL
Morgan KR, see Chappell MA, et al
Morgan PJ, Mordue W (1983) Electrochemical gradients across *Locusta* Malpighian tubules 151:175
Morgan TD, see Hiruma K, et al
Moriyama S, Takahashi A, Hirano T, Kawauchi H (1990) Salmon growth hormone is transported into the circulation of rainbow trout, *Oncorhynchus mykiss*, after intestinal administration 160:251
Morrill AC, Powell EN, Bidigare RR, Shick JM (1988) Adaptations to life in the sulfide system: a comparison of oxygen detoxifying enzymes in thiobiotic and oxybiotic meiofauna (and freshwater planarians) 158:335
Morris JP, see Duman JG, et al
Morris S, Bridges CR, Grieshaber MK (1986) The potentiating effect of purine bases and some of their derivatives on the oxygen affinity of haemocyanin from the crayfish *Austropotamobius pallipes* 156:431
Morris S, Greenaway P (1990) Adaptations to a terrestrial existence by the robber crab *Birgus latro* L.V. The activity of carbonic anhydrase in gills and lungs 160:217
Morris S, Greenaway P, McMahon BR (1988) Oxygen and carbon dioxide transport by the haemocyanin of an amphibious crab, *Holthuisana transversa* 157:873
Morris S, see Taylor AC, et al
Morse DE, see Cariolou MA
Morse DE, see Jensen RA
Morse DE, see Trpido-Rosenthal HG
Morse MP, see Meyhöfer E, et al
Mortensen A, Tindall A (1984) The role of urea in nitrogen excretion and caecal nitrogen metabolism in Willow ptarmigan 155:71
Mortola JP, Noworaj A (1985) Breathing pattern and growth: comparative aspects 155:171
Mosher K, see Binkley S, et al
Mosser DD, Bols NC (1988) Relationship between heat-shock protein synthesis and thermotolerance in rainbow trout fibroblasts 158:457
Motta PJ, see Burgoon DA, et al
Motte I de la, see Burkhardt D
Moulins M, see Rezer E
Mrosovsky N, see Lees JG, et al
Mullainadhan P, Renwrantz L (1989) Comparative analysis of agglutinins from hemolymph and albumin gland of *Helix pomatia* 159:443
Mumm B, Kaul R, Heldmaier G, Schmidt I (1989) Endogenous 24-hour cycle of core temperature and oxygen consumption in week-old Zucker rat pups 159:569
Mundy JE, see Wheeler CH, et al
Murphy CJ, Howland HC (1983) Owl eyes: Accommodation, corneal curvature and refractive state (A) 151:277

Murray TF, Siebenaller JF (1987) Comparison of the binding properties of A_1 adenosine receptors in brain membranes of two congeneric marine fishes living at different depths 157:267

N

Nachtigall W, Rothe U, Feller P, Jungmann R (1989) Flight of the honey bee. III. Flight metabolic power calculated from gas analysis, thermoregulation and fuel consumption 158:729
Nachtigall W, see Biesel W
Nachtigall W, see Feller P
Nachtigall W, see Hirth KD, et al
Nachtigall W, see Jungmann R, et al
Nachtigall W, see Rothe H-J
Nachtigall W, see Rothe H-J, et al
Nachtigall W, see Rothe U
Nagai M, Iriki M (1986) Characteristics of cardiovascular responses of the bullfrog (*Rana catesbeiana*) to thermal stimulation of the spinal cord 156:611
Nagayama T, Takahata M, Hisada M (1983) Local spikeless interaction of motoneuron dendrites in the crayfish *Procambarus clarkii* Girard (A) 152:335
Nagel A (1989) Paradoxical social effects on response to cold during ontogeny of the common white-toothed shrew, *Crocidura russula* 159:301
Nagel I, see Hoffmann B, et al
Nagle GT, Painter SD, Kelner KL, Blankenship JE (1985) Atrial gland cells synthesize a family of peptides that can induce egg laying in *Aplysia* 156:43
Nagle GT, see Kelner KL, et al
Nagy KA, see Bell GP, et al
Nakagawa S, see Tazawa H
Narins PM, see Zelick RD, et al
Neas NP, Hazel JR (1985) Partial purification and kinetic characterization of the microsomal phospholipase A_2 from thermally acclimated rainbow trout (*Salmo gairdneri*) 155:461
Nedoma J, see Janský L, et al
Nelson RA, see Ahlquist DA, et al
Nestler JR (1990) Intracellular pH during daily torpor in *Peromyscus maniculatus* 159:661
Nestler JR, see Snyder GK
Neuckel W (1985) Anal uptake of water in terrestrial pulmonate snails 156:291
Neuweiler G, see Vogler B
Neven LG, Duman JG, Beals JM, Castellino FJ (1986) Overwintering adaptations of the stag beetle, *Ceruchus piceus*: removal of ice nucleators in the winter to promote supercooling 156:707
Neven LG, Duman JG, Low MG, Sehl LC, Castellino FJ (1989) Purification and characterization of an insect hemolymph lipoprotein ice nucleator: evidence for the importance of phosphatidylinositol and apolipoprotein in the ice nucleator activity 159:71
Neven LG, see Lei Xu, et al
Nevo E, see Edoute Y, et al
Nevo E, see Haim A, et al
Newcomb RW (1983) Peptides in the sinus gland of *Cardisoma carnifex*: isolation and amino acid analysis 153:207
Newsholme EA, see Wegener G, et al
Nibbio B, see Epple A
Nicol SC, see Stahel CD, et al
Nicholls TJ, see Follett BK
Nicholls TJ, see Follett BK, et al
Nichols JW, Weber LJ (1989) Comparative oxygen affinity of fish and mammalian myoglobins 159:205
Nicolson SW, Hanrahan SA (1986) Diuresis in a desert beetle? Hormonal control of the Malpighian tubules of *Onymacris plana* (Coleoptera: Tenebrionidae) 156:407
Nielsen KE, Gesser H (1984) Energy metabolism and intracellular pH in trout heart muscle under anoxia and different $[Ca^{2+}]_o$ 154:523
Niesel A, see Hoppeler H, et al
Nikinmaa M (1983) Adrenergic regulation of haemoglobin oxygen affinity in rainbow trout red cells 152:67
Nikinmaa M (1986) Red cell pH of lamprey (*Lampetra fluviatilis*) is actively regulated 156:747
Nikinmaa M, Cech Jr JJ, McEnroe M (1984) Blood oxygen transport in stressed striped bass (*Morone saxatilis*): role of beta-adrenergic responses 154:365
Nilssen KJ, see Finstad B, et al
Nilsson GE (1988) A comparative study of aldehyde dehydrogenase and alcohol dehydrogenase activities in crucian carp and three other vertebrates: apparent adaptations to ethanol production 158:479
Nilsson S, see Fritsche R
Nolan JV, see White RG, et al
Nordbø H, see Lyngstadaas SP, et al
Noworaj A, see Mortola JP
Nuboer JFW, Moed PJ (1983) Increment-threshold spectral sensitivity in the rabbit (A) 151:353
Nuboer JFW, Nuys WM van, Steenbergen JC van (1983) Colour changes in a light regimen as synchronizers of circadian activity (A) 151:359
Nuboer JFW, Nuys WM van, Wortel JF (1983) Cone systems in the rabbit retina revealed by ERG-null-detection (A) 151:347
Nürnberger F, see Roth J, et al
Nuutinen M, see Brix O, et al
Nuys WM van, see Nuboer JFW, et al

O

Ogasawara T, Hirano T (1984) Changes in osmotic water permeability of the eel gills during seawater and freshwater adaptation 154:3
Ogasawara T, see Sakamoto T, et al
Ogiso M, Shinohara Y, Hanaoka K, Kageyama T, Takahashi SY (1985) Further purification and characterization of trehalases from the American cockroach, *Periplaneta americana* 155:553
Okada N, Azuma M, Eguchi M (1989) Alkaline-phosphatase isozymes in the midgut of silkworm: purification of high pH-stable microvillus and labile cytosolic enzymes 159:123
Okawara Y, see Takei Y, et al
Olberg RM (1983) Pheromone-triggered flip-flopping interneurons in the ventral nerve cord of the silkworm moth, *Bombyx mori* (A) 152:297
Oldfield BP (1983) Central projections of primary auditory fibres in Tettigoniidae (Orthoptera: Ensifera) (A) 151:389
Oldfield BP, Hill KG (1983) The physiology of ascending auditory interneurons in the tettigoniid *Caedicia simplex* (Orthoptera: Ensifera): response properties and a model of integration in the afferent auditory pathway (A) 152:495
Olivereau M, see Luze A de, et al
Onken H, Graszynski K (1989) Active Cl^- absorption by the Chinese crab (*Eriocheir sinensis*) gill epithelium measured by trans-epithelial potential difference 159:21
Ono M, see Hyodo S, et al
Orchard I, see Finlayson LH, et al
Osanai M, see Aigaki T
O'Shea JE, see Donald JA, et al
Osman AM (1985) Differential responses of amylase and lipase in the intestine and pancreas of laying hens exposed to intermittent heating 156:297
Østergaard Andersen F, see Korsgaard B
Otero M, see Petriella S, et al
Otzen H, Kuiper JW (1983) The effect of air velocity on the wingstroke frequency of the blowfly *Calliphora erythrocephala* (A) 153:289

P

Packard GC, Packard MJ, Miller K, Boardman TJ (1988) Effects of temperature and moisture during incubation on carcass composition of hatchling snapping turtles (*Chelydra serpentina*) 158:117
Packard GC, see Packard MJ
Packard MJ, Packard GC (1989) Environmental modulation of calcium and phosphorus metabolism in embryonic snapping turtles (*Chelydra serpentina*) 159:501
Packard MJ, Packard GC (1991) Patterns of mobilization of calcium, magnesium, and phosphorus by embryonic yellow-headed blackbirds (*Xanthocephalus xanthocephalus*) 160:649
Packard MJ, see Packard GC, et al
Paganelli CV, see Whittow GC, et al
Page TL (1983) Regeneration of the optic tracts and circadian pacemaker activity in the cockroach *Leucophaea maderae* (A) 152:231
Page TL (1983) Effects of optic-tract regeneration on internal coupling in the circadian system of the cockroach (A) 153:353
Painter SD, see Kelner KL, et al
Painter SD, see Nagle GT, et al
Pak MD, see Henrich VC, et al
Palacios L, see Lillywhite HB, et al
Panayiotides-Djaferis H, see Wollmuth LP, et al
Papadopoulos A, see Gaitanaki C, et al
Papadopoulos A, see Michaelidis B, et al

Pardi L, Scapini F (1983) Inheritance of solar direction finding in sandhoppers: mass-crossing experiments (A) 151:435
Parenti P, Sacchi FV, Hanozet GM, Giordana B (1986) Na-dependent uptake of phenylalanine in the midgut of a cockroach (*Blabera gigantea*) 156:549
Parsons DW, see Pinsker HM
Passera L, Keller L (1990) Loss of mating flight and shift in the pattern of carbohydrate storage in sexuals of ants (Hymenoptera; Formicidae) 160:207
Patterson JA, Silver SC (1983) Afferent and efferent components of *Octopus* retina (A) 151:381
Patterson JW, Davies PMC (1984) The influence of temperature, sexual condition, and season on the metabolic rate of the lizard *Psammodromus hispanicus* 154:311
Paul R, Fincke T (1989) Book lung function in arachnids. II. Carbon dioxide release and its relations to respiratory surface, water loss and heart frequency 159:419
Paul R, Fincke T, Linzen B (1987) Respiration in the tarantula *Eurypelma californicum*: evidence for diffusion lungs 157:209
Paul R, Fincke T, Linzen B (1989) Book lung function in arachnids. I. Oxygen uptake and respiratory quotient during rest, activity and recovery – relations to gas transport in the haemolymph 159:409
Paul R, Tiling K, Focke P, Linzen B (1989) Heart and circulatory functions in a spider (*Eurypelma californicum*): the effects of hydraulic force generation 158:673
Paul R, see Fincke T
Pauly B, see Roth J, et al
Payan P, see Perry SF, et al
Pedersen SB, see Skovmand O
Pehowich DJ, Wang LCH (1984) Seasonal changes in mitochondrial succinate dehydrogenase activity in a hibernator, *Spermophilus richardsonii* 154:495
Penn JS, see Hamilton PV, et al
Penzlin H, see Baumann E
Penzlin H, see Baumann E, et al
Pequeux A, see Shelton C, et al
Peretz B, see Reilly WM
Pérez-Campo R, see López-Torres M, et al
Perry II SF, see Wright PA, et al
Perry SF (1990) Gas exchange strategy in the Nile crocodile: a morphometric study 159:761
Perry SF, Payan P, Girard JP (1984) Adrenergic control of branchial chloride transport in the isolated perfused head of the freshwater trout (*Salmo gairdneri*) 154:269
Perry SF, see Hyde DA
Perry SF, see Hyde DA, et al
Perry SF, see Kinkead R
Perry SF, see Vermette MG
Petrausch G, see Siebers D, et al
Petriella S, Reboreda JC, Otero M, Segura ET (1989) Antidiuretic responses to osmotic cutaneous stimulation in the toad, *Bufo arenarum*. A possible adaptive control mechanism for urine production 159:91
Petriella S, see Segura ET, et al
Petrossian E, see Karasov WH, et al
Pettit TN, see Whittow GC, et al
Peyraud C, see Maxime V, et al
Peyraud C, see Thomas S, et al
Peyraud-Waitzenegger M, see Maxime V, et al
Phillips JE, see Chamberlin ME
Phillips JG, see Marshall AT, et al
Pickup J (1990) Strategies of cold-hardiness in three species of Antarctic dorylaimid nematodes 160:167
Pieper DR, Reiter RJ, Unthank PD, Addy JF (1988) Evidence that olfactory bulbectomy does not influence testicular regression in golden hamsters on short photoperiod by altering pineal melatonin production 158:301
Pierce SK, see Costa CJ
Pierce SK, see Edwards SC
Pietschmann M, see Jürgens KD, et al
Piiper J, see Yamaguchi K, et al
Pinsker HM, Parsons DW (1985) Temperature dependence of egg laying in *Aplysia brasiliana* and *A. californica* 156:21
Pischetola M, see D'Aniello A, et al
Pivorun EB, see Tannenbaum MG
Platzer U, see Wieser W, et al
Plaxton WC, Storey KB (1985) Tissue specific isozymes of pyruvate kinase in the channelled whelk *Busycotypus canaliculatum*: enzyme modification in response to environmental anoxia 155:291
Plaxton WC, Storey KB (1986) Glycolytic enzyme binding and metabolic control in anaerobiosis 156:635
Playle RC, Wood CM (1989) Water chemistry changes in the gill micro-environment of rainbow trout: experimental observations and theory 159:527
Playle RC, Wood CM (1989) Water pH and aluminum chemistry in the gill microenvironment of rainbow trout during acid and aluminum exposures 159:539
Plummer MR, see Reichert H, et al
Pollak GD, see Bodenhamer RD
Ponganis PJ, Kooyman GL, Zornow MH, Castellini MA, Croll DA (1990) Cardiac output and stroke volume in swimming harbor seals 160:473
Porter WP, see Conley KE
Porthé-Nibelle J, see Bianchini L, et al
Pörtner HO, Grieshaber MK, Heisler N (1984) Anaerobiosis and acid-base status in marine invertebrates: effect of environmental hypoxia on extracellular and intracellular pH in *Sipunculus nudus* L. 155:13
Pörtner HO, Heisler N, Grieshaber MK (1984) Anaerobiosis and acid-base status in marine invertebrates: a theoretical analysis of proton generation by anaerobic metabolism 155:1
Pörtner HO, see Zange J, et al
Pospíšilová D, see Janský L, et al
Potter IC, see Macey DJ, et al
Pough FH, see Beuchat CA, et al
Poupin J, see Thomas S
Powell EN, see Morrill AC, et al
Prabhakara Rao Y, see Uma Devi V, et al
Prasada Rao DGV, see Uma Devi V, et al
Precht W, see Dieringer N, et al
Preis H, see Ruf T, et al
Preston DG, see Bodznick D
Preston RR, Usherwood PNR (1988) Characterization of a specific L-[^{3}H]glutamic acid binding site on cilia isolated from *Paramecium tetraurelia* 158:345
Prestwich KN (1988) The constraints on maximal activity in spiders. I. Evidence against the fluid insufficiency hypothesis 158:437
Prestwich KN (1988) The constraints on maximal activity in spiders. II. Limitations imposed by phosphagen depletion and anaerobic metabolism 158:449
Prestwich KN, see Anderson JF
Primmett D, see Eddy FB, et al
Printz MP, see Rettig R, et al
Prinzinger R (1988) Energy metabolism, body-temperature and breathing parameters in non-torpid blue-naped mousebirds *Urocolius macrourus* 157:801
Prior DJ, see Uglem GL, et al
Prosser CL, see Kent J, et al
Prusch RD, Vedovatti PA (1989) Calcium movements associated with peptide induced phagocytosis in *Amoeba proteus* 159:287
Pusey BJ (1986) The effect of starvation on oxygen consumption and nitrogen excretion in *Lepidogalaxias salamandroides* (Mees) 156:701
Putzer VM, Zwaan A de, Wieser W (1990) Anaerobic energy metabolism in the oligochaete *Lumbriculus variegatus* Müller 159:707

Q

Quinlan MC, Hadley NF (1983) Water relations of the terrestrial isopods *Porcellio laevis* and *Porcellionides pruinosus* (Crustacea, Oniscoidea) 151:155
Quinlan MC, see Hadley NF

R

Raber P, see Marder J
Racey PA, see Fowler PA
Racz K, Kuchel O, Buu NT (1985) Species differences in the distribution of adrenal free and sulfoconjugated catecholamines 155:367
Raeder U, see Stöcker W, et al
Rafael J, Vsiansky P, Heldmaier G (1985) Seasonal adaptation of brown adipose tissue in the Djungarian hamster 155:521
Rafael J, Vsiansky P, Heldmaier G (1985) Increased contribution of brown adipose tissue to nonshivering thermogenesis in the Djungarian hamster during cold-adaptation 155:717
Raffin J-P (1984) Purification and properties of trout gill AMP deaminase 154:55
Raffin JP, Thébault MT, Le Gall JY (1988) Changes in phosphometabolites and intracellular pH in the tail muscle of the prawn *Palaemon serratus* as shown by in vivo ^{31}P-NMR 158:223
Rahman MS, Storey KB (1988) Role of covalent modification in the control of glycolytic enzymes in response to environmental anoxia in goldfish 157:813
Rahmann H, Hilbig R (1983) Phylogenetical aspects of brain gangliosides in vertebrates 151:215

Rahn H, see Swart D
Ralph CL, see Firth BT, et al
Raming K, Krieger J, Breer H (1990) Primary structure of a pheromone-binding protein from *Antheraea pernyi*: homologies with other ligand-carrying proteins 160:503
Raming K, see Boekhoff I, et al
Randall DJ, see Wright PA, et al
Rankin JC, see Bennett MB
Rathmayer W, Erxleben C (1983) Identified muscle fibers in a crab. I. Characteristics of excitatory and inhibitory neuromuscular transmission (A) 152:411
Raul F, see Galluser M, et al
Rauschenbach IYu, Lukashina NS, Maksimovsky LF, Korochkin LI (1987) Stress-like reaction of *Drosophila* to adverse environmental factors 157:519
Rautenberg W, see Barnas GM, et al
Rautenberg W, see Bech C, et al
Rayer B, Cagol E, Horn E (1983) Compensation of vestibular-induced deficits in relation to the development of the Southern Clawed Toad, *Xenopus laevis* Daudin. A behavioral study (A) 151:487
Rayó JM, see Esteban S, et al
Reboreda JC, see Petriella S, et al
Reboreda JC, see Segura ET, et al
Recio JM, see Rodriguez-Cabello JC, et al
Recio JM, see Sigüenza AF, et al
Redecker B, Zebe E (1988) Anaerobic metabolism in aquatic insect larvae: studies on *Chironomus thummi* and *Culex pipiens* 158:307
Reichert H, Plummer MR, Wine JJ (1983) Identified nonspiking local interneurons mediate nonrecurrent, lateral inhibition of crayfish mechanosensory interneurons (A) 151:261
Reichert H, Wine JJ (1983) Coordination of lateral giant and non-giant systems in crayfish escape behavior (A) 153:3
Reilly WM, Peretz B (1987) Excitation-contraction coupling in non-spiking smooth muscle in the gill of *Aplysia* 157:659
Reinertsen RE, Haftorn S (1983) Nocturnal hypothermia and metabolism in the Willow Tit *Parus montanus* at 63°N 151:109
Reinertsen RE, Haftorn S (1984) The effect of short-time fasting on metabolism and nocturnal hypothermia in the Willow Tit *Parus montanus* 154:23
Reinertsen RE, Haftorn S (1986) Different metabolic strategies of northern birds for nocturnal survival 156:655
Reiter RJ, see Hoffman RA, et al
Reiter RJ, see Pieper DR, et al
Rembold H, see Hartfelder K
Renaud JM, Stevens ED (1983) A comparison between field habits and contractile performance of frog and toad sartorius muscle 151:127
Renninger GH (1983) Synchronization of impulse generation by lateral inhibition in the *Limulus* compound eye. Intracellular studies (A) 152:517
Rensing L, see Techel D, et al
Renwrantz L, see Mullainadhan P
Rettig R, Gerstberger R, Meyer J-U, Intaglietta M, Printz MP (1989) Central effects of angiotensin II in conscious hamsters: drinking, pressor response, and release of vasopressin 158:703
Rettig R, Meyer J-U, Gerstberger R, Printz MP, Intaglietta M (1989) Central angiotensin II stimulates arteriolar vasomotion in conscious hamsters 159:577
Rezer E, Moulins M (1983) Expression of the crustacean pyloric pattern generator in the intact animal (A) 153:17
Rhead WJ, see Mihalik SJ
Rheinlaender J, see Römer H
Rial RV, see Esteban S, et al
Rice GE, see Arad Z, et al
Rice GE, see Árnason SS, et al
Richard DS, Applebaum SW, Gilbert LI (1989) Developmental regulation of juvenile hormone biosynthesis by the ring gland of *Drosophila melanogaster* 159:383
Ricquier D, see Klaus S, et al
Riddiford LM, see Fittinghoff CM
Riddiford LM, see Hiruma K, et al
Riddiford LM, see Huebers HA, et al
Riggs AF, see Davis BJ
Rintamäki H, see Saarela S, et al
Rioux A, Komuniecki R (1984) 2-Methylvalerate formation in mitochondria of *Ascaris suum* and its relationship to anaerobic energy generation 154:349
Risnes S, see Lyngstadaas SP, et al
Roberts A, Clarke JDW (1983) The sensory systems of embryos of the newt: *Triturus vulgaris* (A) 152:529
Roberts A, see Soffe SR, et al
Roberts B, Gilbert I (1986) Ring gland and prothoracic gland sensitivity to interspecific prothoraciçotropic hormone extracts 156:767
Roberts JR, Baudinette RV (1988) Responses to heat stress in two species of Australian quail, *Coturnix pectoralis* and *Coturnix chinensis* 158:205
Robertson FM, see Stephens GA
Robin J-P, Cherel Y, Girard H, Géloen A, Le Maho Y (1987) Uric acid and urea in relation to protein catabolism in long-term fasting geese 157:491
Robin J-P, see Le Ninan F, et al
Robinson WE, see Meyhöfer E, et al
Rode I, see Thorey I, et al
Rodeau JL, see Gaillard S
Rodeau JL, see Malan A, et al
Rodríguez A, see Herrera FC, et al
Rodriguez-Cabello JC, Agapito MT, Garcia-Herrero I, Recio JM (1989) Effects of EGTA and calmodulin, neutral thiol proteinases and protein kinase C inhibitors on loss of chicken pineal serotonin N-acetyltransferase activity 159:583
Rokkones E, Alestrøm P, Skjervold H, Gautvik KM (1989) Microinjection and expression of a mouse metallothionein human growth hormone fusion gene in fertilized salmonid eggs 158:751
Rollag MD, see White BH, et al
Römer H, Rheinlaender J (1983) Electrical stimulation of the tympanal nerve as a tool for analysing the responses of auditory interneurons in the locust (A) 152:289
Root TM, see Maier L, et al
Rose RJ, see Evans DL
Rosenberg L, see Karasov WH, et al
Rosengren E, see Carlberg M
Roth J, Merker G, Nürnberger F, Pauly B, Zeisberger E (1990) Changes in physiological and neuroendocrine properties during thermal adaptation of golden hamsters (*Mesocricetus auratus*) 160:153
Roth J, Zeisberger E, Schwandt H-J (1988) Influence of increased catecholamine levels in blood plasma during cold-adaptation and intramuscular infusion on thresholds of thermoregulatory reactions in guinea-pigs 157:855
Rothe H-J, Biesel W, Nachtigall W (1987) Pigeon flight in a wind tunnel. II. Gas exchange and power requirements 157:99
Rothe H-J, Nachtigall W (1987) Pigeon flight in a wind tunnel. I. Aspects of wind tunnel design, training methods and flight behaviour of different pigeon races 157:91
Rothe U, Nachtigall W (1989) Flight of the honey bee. IV. Respiratory quotients and metabolic rates during sitting, walking and flying 158:739
Rothe U, see Jungmann R, et al
Rothe U, see Nachtigall W, et al
Rübsamen K, Hume ID, Foley WJ, Rübsamen U (1984) Implications of the large surface area to body mass ratio on the heat balance of the greater glider (*Petauroides volans*: Marsupialia) 154:105
Rübsamen K, see Rübsamen U, et al
Rübsamen U, Hume ID, Rübsamen K (1983) Effect of ambient temperature on autonomic thermoregulation and activity patterns in the rufous rat-kangaroo (*Aegyprymnus rufescens*: Marsupialia) 153:175
Rübsamen U, see Rübsamen K, et al
Rudnicka M, see Wing KD, et al
Rüegg JC, see Gagelmann M, et al
Ruf T, Klingenspor M, Preis H, Heldmaier G (1991) Daily torpor in the Djungarian hamster (*Phodopus sungorus*): interactions with food intake, activity, and social behaviour 160:609
Ruland C, see Jegla TC, et al
Rydberg A, see Kiessling K-H, et al

S

Saarela M, see Saarela S, et al
Saarela S, Heldmaier G (1987) Effect of photoperiod and melatonin on cold resistance, thermoregulation and shivering/nonshivering thermogenesis in Japanese quail 157:625
Saarela S, Rintamäki H, Saarela M (1984) Seasonal variation in the dynamics of ptiloerection and shivering correlated changes in the metabolic rate and body temperature of the pigeon 154:47
Sacchi FV, see Parenti P, et al
Saimi Y, see Hennessey TM, et al
Sakakibara Y, see Massabuau J-C, et al
Sakamoto T, Ogasawara T, Hirano T (1990) Growth hormone kinetics during adaptation to a hyperosmotic environment in rainbow trout 160:1
Sakowski I, see Ehlers D, et al
Saks TM, see Bohn H
Saleuddin ASM, see Kunigelis SC

Sanchez M, see Sigüenza AF, et al
Sargent PA, see Youson JH, et al
Sasaki T, see Indrasith LS, et al
Sasidharan TO, Goyal SP, Chand P, Ghosh PK (1990) The effects of water deprivation and salt load on water conservation efficiency in two Indian desert gerbils 160:413
Sasidharan TO, see Goyal SP, et al
Sass H (1983) Production, release and effectiveness of two female sex pheromone components of *Periplaneta americana* (A) 152:309
Sassaman CA, see MacKay WP
Sastre M, see Esteban S, et al
Satou M, Fujita I, Ichikawa M, Yamaguchi K, Ueda K (1983) Field potential and intracellular potential studies of the olfactory bulb in the carp: evidence for a functional separation of the olfactory bulb into lateral and medial subdivisions (A) 152:319
Scapini F, see Pardi L
Scharstein H, see Schmitz B, et al
Schartau W, Leidescher T (1983) Composition of the hemolymph of the tarantula *Eurypelma californicum* 152:73
Schmaranzer S, Stabentheiner A (1988) Variability of the thermal behavior of honeybees on a feeding place 158:135
Schmidt I, see Mumm B, et al
Schmitz B, Scharstein H, Wendler G (1983) Phonotaxis in *Gryllus campestris* L. (Orthoptera, Gryllidae). II. Acoustic orientation of female crickets after occlusion of single sound entrances (A) 152:257
Schmuck R, Kobelt F, Linsenmair KE (1988) Adaptations of the reed frog *Hyperolius viridiflavus* (Amphibia, Anura, Hyperoliidae) to its arid environment. V. Iridophores and nitrogen metabolism 158:537
Schneider D, see Wink M
Schneider JE, Hamilton JM, Wade GN (1987) Genetic association between nest building and brown adipose tissue thermogenesis in female house mice 157:39
Schneider R, see Burtscher HJ, et al
Schnitzler H-U, Flieger E (1983) Detection of oscillating target movements by echolocation in the Greater Horseshoe bat (A) 153:385
Schoening FRL, see Kurstjens SP, et al
Scholes P, see Harden Jones FR
Schricker B, see Fahrenholz L, et al
Schwabl H, see Moore MC, et al
Schwalme K, Mackay WC (1985) The influence of angling-induced exercise on the carbohydrate metabolism of northern pike (*Esox lucius* L.) 156:67
Schwandt H-J, see Roth J, et al
Schwarz H, see Haupt J, et al
Schwarz M, see Dmi'el R
Schweiger M, see Burtscher HJ, et al
Schweigert FJ, Stobo WT, Zucker H (1990) Vitamin E and fatty acids in the grey seal (*Halichoerus grypus*) 159:649
Schweitzer J (1983) The physiological and anatomical localization of two electroreceptive diencephalic nuclei in the thornback ray, *Platyrhinoidis triseriata* (A) 153:331
Seelinger G (1983) Response characteristics and specificity of chemoreceptors in *Hemilepistus reaumuri* (Crustacea, Isopoda) (A) 152:219
Segura ET, Reboreda JC, Skorka A, Cuello ME, Petriella S (1984) Role of the CNS in the control of the water economy of the toad *Bufo arenarum* Hensel. III. Skin permeability increases to raised osmotic pressure of the external 'milieu' 154:573
Segura ET, see Lüthy IA, et al
Segura ET, see Petriella S, et al
Sehl LC, see Neven LG, et al
Seidl K, see Heldmaier G
Sejrsen P, see Midtgård U, et al
Sekura RD, see White BH, et al
Sell D, Houlihan DF (1983) Oxygen consumption of locust and cockroach recta in vitro during fluid absorption 153:223
Seller TJ, see Davey NJ
Sephton D, Bailey J, Driedzic WR (1990) Impact of acute temperature transition on enzyme activity levels, oxygen consumption, and exogenous fuel utilization in sea raven (*Hemitripterus americanus*) hearts 160:511
Serianni AS, see Kukal O, et al
Seyfarth E-A, see Maier L, et al
Seymour RS, Bradford DF (1987) Gas exchange through the jelly capsule of the terrestrial eggs of the frog, *Pseudophryne bibroni* 157:477
Seymour RS, Visschedijk AHJ (1988) Effects of variation in total and regional shell conductance on air cell gas tensions and regional gas exchange in chicken eggs 158:229
Seymour RS, Vleck D, Vleck CM (1986) Gas exchange in the incubation mounds of megapode birds 156:773
Seymour RS, Vleck D, Vleck CM, Booth DT (1987) Water relations of buried eggs of mound building birds 157:413
Shabetai R, see Lai NC, et al
Shelly TE, see Morgan KR, et al
Shelton C, Macdonald AG, Pequeux A, Gilchrist I (1985) The ionic composition of the plasma and erythrocytes of deep sea fish 155:629
Shen J-X (1983) The cercus-to-giant interneuron system in the bushcricket *Tettigonia cantans*: morphology and response to low-frequency sound (A) 151:449
Shen J-X (1983) A behavioral study of vibrational sensitivity in the pigeon (*Columba livia*) (A) 152:251
Shephard KL, McWilliams PG (1989) Ionic regulation by the eggs of salmon 159:249
Shetlar RE, see Bevan C, et al
Shick JM, see Morrill AC, et al
Shima A, see Kubota Y
Shinohara Y, see Ogiso M, et al
Shoemaker VH, see Kaul R
Shoemaker VH, see Stinner JN
Shuttleworth TJ, see Davis MS
Shuttleworth TJ, see Stagg RM
Sidell BD, Johnston IA, Moerland TS, Goldspink G (1983) The eurythermal myofibrillar protein complex of the mummichog (*Fundulus heteroclitus*): adaptation to a fluctuating thermal environment 153:167
Siebenaller JP (1984) Pressure-adaptive differences in NAD-dependent dehydrogenases of congeneric marine fishes living at different depths 154:443
Siebenaller JF, see Hennessey Jr JP
Siebenaller JF, see Murray TF
Siebers D, Petrausch G, Böttcher K (1990) Is there a chloride ATPase in the gills of the shore crab *Carcinus maenas*? 160:223
Siegel RW, see Jackson FR, et al
Siegmund BR, see Kreutzer U, et al
Sigüenza AF, Recio JM, Sanchez M, Agapito MT (1988) Endogenous regulation of the pineal melatonin secretion in *Gallus domesticus* 158:381
Silva P, Spokes K, Epstein JA, Stevens A, Epstein FH (1984) Cyclic AMP stimulates ouabain-insensitive ion movement in shark rectal gland 154:139
Silver SC, see Patterson JA
Simmons JA, Kick SA, Lawrence BD, Hale C, Bard C, Escudié B (1983) Acuity of horizontal angle discrimination by the echolocating bat, *Eptesicus fuscus* (A) 153:321
Simon E (1987) Effect of acclimation temperature on the elongation step of protein synthesis in different organs of rainbow trout 157:201
Simon E, see Brummermann M
Simon E, see Erbe K-H, et al
Simon E, see Gray DA
Simon E, see Gray DA, et al
Simonneaux V, Barra JA, Humbert W, Kirsch R (1987) The role of mucus in ion absorption by the oesophagus of the seawater eel (*Anguilla anguilla* L.). Electrophysiological, structural and cytochemical investigations 157:187
Simonneaux V, Humbert W, Kirsch R (1987) Mucus and intestinal ion exchanges in the seawater adapted eel, *Anguilla anguilla* L. 157:295
Simonneaux V, Humbert W, Kirsch R (1988) Structure and osmoregulatory functions of the intestinal folds in the seawater eel, *Anguilla anguilla* 158:45
Simon-Oppermann C, see Gerstberger R, et al
Skadhauge E, see Arad Z, et al
Skadhauge E, see Árnason SS, et al
Skadhauge E, see Dawson TJ, et al
Skadhauge E, see Midtgård U, et al
Skadhauge E, see Thomas DH
Skinner ER, see Black D
Skisak CM, see Kasschau MR, et al
Skjervold H, see Rokkones E, et al
Skorka A, see Segura ET, et al
Skovmand O, Pedersen SB (1983) Song recognition and song pattern in a shorthorned grasshopper (A) 153:393
Slåma K (1984) Recording of haemolymph pressure pulsations from the insect body surface 154:635
Slaughter D, see Hew CL, et al
Smalley SR, see Macey DJ, et al
Smit H, see Thillart G van den
Smith PJ, see Houlihan DF, et al
Smits AW, Lillywhite HB (1985) Maintenance of blood volume in snakes: transcapillary shifts of extravascular fluids during acute hemorrhage 155:305
Snyder GK (1990) Capillarity and diffusion distances in skeletal muscles in birds 160:583

Snyder GK, Nestler JR (1990) Relationships between body temperature, thermal conductance, Q_{10} and energy metabolism during daily torpor and hibernation in rodents 159:667
Söderhäll K, see Johansson MW
Soffe SR, Clarke JDW, Roberts A (1983) Swimming and other centrally generated motor patterns in newt embryos (A) 152:535
Somero GN, see Gibbs A
Sprokin LM, Morgan EH (1988) Species specificity of transferrin binding, endocytosis and iron internalization by cultured chick myogenic cells 158:559
Southwell KM, see Wright SH, et al
Southwick EE (1985) Allometric relations, metabolism and heat conductance in clusters of honey bees at cool temperatures 156:143
Souza SL, see Chappell MA
Souza SL, see Chappell MA, et al
Spairani HJ, see Culik B, et al
Spencer AN, see Chung JM, et al
Spicer JI, McMahon BR (1990) Haemocyanin oxygen binding and the physiological ecology of a range of talitroidean amphipods (Crustacea) I. pH, temperature, and L-lactate sensitivity 160:195
Spokes K, see Silva P, et al
Spry DJ, Wood CM (1984) Acid-base, plasma ion and blood gas changes in rainbow trout during short term toxic zinc exposure. 154:149
Stabentheiner A, see Schmaranzer S
Stagg RM, Shuttleworth TJ (1986) Surfactant effects on adrenergic responses in the gills of the flounder (*Platichthys flesus* L.) 156:727
Stagg RM, Shuttleworth TJ (1987) Sites of interactions of surfactants with beta-adrenergic responses in trout (*Salmo gairdneri*) gills 157:429
Stahel CD, Megirian D, Nicol SC (1984) Sleep and metabolic rate in the little penguin, *Eudyptula minor* 154:487
Stangier J, Hilbich C, Keller R (1989) Occurrence of crustacean cardioactive peptide (CCAP) in the nervous system of an insect, *Locusta migratoria* 159:5
Starnecker G, see Bückmann D, et al
Steen JB, Krog JO, Töyen Ø, Bretten S (1989) Poikilothermy and cold tolerance in young house martins (*Delichon urbica*) 159:379
Steen JB, see Andersen Ø
Steen JB, see Grav JH, et al
Steen JB, see Tøien Ø, et al
Steenbergen JC van, see Nuboer JFW, et al
Steiger DL, see Ahlquist DA, et al
Stephens GA, Creekmore JS (1984) Response of plasma renin activity to hypotension and angiotensin converting enzyme inhibitor in the turtle 154:287
Stephens GA, Robertson FM (1985) Renal responses to diuretics in the turtle 155:387
Stephens GC, see Davis JP
Stephens GC, see Davis JP, et al
Stephens GC, see Wright SH, et al
Stephens PJ, Atwood HL (1983) Conversion of synaptic performance in crab motor axons by temperature changes (A) 153:455
Stevens A, see Silva P, et al
Stevens ED, see Renaud JM
Stewart MM, see Beuchat CA, et al
Stinner JN (1987) Gas exchange and air flow in the lung of the snake, *Pituophis melanoleucus* 157:307
Stinner JN, Shoemaker VH (1987) Cutaneous gas exchange and low evaporative water loss in the frogs *Phyllomedusa sauvagei* and *Chiromantis xerampelina* 157:423
Stith BJ (1984) Biochemical examination of *Rana pipiens* epithelial mucus 155:89
Stith BJ (1984) Effects of an external charged layer on transepithelial ion movement in frog skin 155:97
Stobo WT, see Schweigert FJ, et al
Stöcker W, Raeder U, Bijlholt MMC, Wichertjes T, Bruggen EFJ van, Markl J (1988) The quaternary structure of four crustacean two-hexameric hemocyanins: immunocorrelation, stoichiometry, reassembly and topology of individual subunits 158:271
Stolte H, see Elger E, et al
Stolte H, see Flöge J, et al
Storey JM, Storey KB (1985) Freezing and cellular metabolism in the gall fly larva, *Eurosta solidaginis* 155:333
Storey JM, Storey KB (1985) Triggering of cryoprotectant synthesis by the initiation of ice nucleation in the freeze tolerant frog, *Rana sylvatica* 156:191
Storey JM, Storey KB (1990) Carbon balance and energetics of cryoprotectant synthesis in a freeze-tolerant insect: responses to perturbation by anoxia 160:77
Storey JM, see Storey KB
Storey KB (1985) Kinetic and regulatory properties of pyruvate kinase isozymes from flight muscle and fat body of the cockroach, *Periplaneta americana* 155:339
Storey KB (1987) Glycolysis and the regulation of cryoprotectant synthesis in liver of the freeze tolerant wood frog 157:373
Storey KB, Storey JM (1984) Biochemical adaptation for freezing tolerance in the wood frog, *Rana sylvatica* 155:29
Storey KB, see Brooks SPJ
Storey KB, see Churchill TA
Storey KB, see Male KB
Storey KB, see Plaxton WC
Storey KB, see Rahman MS
Storey KB, see Storey JM
Stout JF, DeHaan CH, McGhee RW (1983) Attractiveness of the male *Acheta domesticus* calling song to females. I. Dependence on each of the calling song features (A) 153:509
Stowe S (1983) Light-induced and spontaneous breakdown of the rhabdoms in a crab at dawn; depolarisation versus calcium levels (A) 153:365
Stowe S (1983) A theoretical explanation of intensity-independent variation of polarisation sensitivity in Crustacean retinula cells (A) 153:435
Strazzullo L, see D'Aniello A, et al
Strumwasser F, see Woolum JC
Stuenkel EL (1983) Biosynthesis and axonal transport of proteins and identified peptide hormones in the X-organ sinus gland neurosecretory system 153:191
Sunnerhagen KS, see Lai NC, et al
Surholt B, Greive H, Hommel C, Bertsch A (1988) Fuel uptake, storage and use in male bumble bees *Bombus terrestris* L. 158:263
Sutter BCh, see Florant GL, et al
Suzuki A, see Hiruma K, et al
Suzuki Y, Kobayashi M, Aida K, Hanyu I (1988) Transport of physiologically active salmon gonadotropin into the circulation in goldfish, following oral administration of salmon pituitary extract 157:753
Swart D, Rahn H (1988) Microclimate of ostrich nests: measurements of egg temperature and nest humidity using egg hygrometers 157:845
Sweeney BM, see Walz B, et al
Swift PR, see Wolf NG, et al
Szuts EZ, see Wood SF, et al

T

Taigen TL, Wells KD (1985) Energetics of vocalization by an anuran amphibian (*Hyla versicolor*) 155:163
Takahashi A, see Moriyama S, et al
Takahashi K, see Chinzei Y, et al
Takahashi SY (1985) Characterization of the guanosine 3′:5′-monophosphate-dependent protein kinase from silkworm eggs and analysis of the endogeneous protein substrates 155:693
Takahashi SY, see Ogiso M, et al
Takahata M, see Nagayama T, et al
Takei Y, Okawara Y, Kobayashi H (1988) Water intake induced by water deprivation in the quail, *Coturnix coturnix japonica* 158:519
Takei Y, Tamaki H, Ando K (1990) Identification and partial characterization of immunoreactive and bioactive atrial natriuretic peptide from eel heart 160:119
Talbot C, see Eddy FB, et al
Tamaki H, see Takei Y, et al
Tannenbaum MG, Pivorun EB (1984) Differences in daily torpor patterns among three south-eastern species of *Peromyscus* 154:233
Taplin LE (1985) Sodium and water budgets of the fasted Estuarine Crocodile, *Crocodylus porosus*, in sea water 155:501
Taylor AC, Morris S, Bridges CR (1985) Oxygen and carbon dioxide transporting properties of the blood of three sublittoral species of burrowing crab 155:733
Taylor EW, see Tyler-Jones R
Taylor JRE (1985) Ontogeny of thermoregulation and energy metabolism in pygoscelid penguin chicks 155:615
Taylor PM, Harris RR (1986) Osmoregulation in *Corophium curvispinum* (Crustacea: Amphipoda), a recent coloniser of freshwater. I. Sodium ion regulation 156:323
Taylor PM, Harris RR (1986) Osmoregulation in *Corophium curvispinum* (Crustacea: Amphipoda), a recent coloniser of freshwater. II. Water balance and the functional anatomy of the antennary organ 156:331
Taylor PM, see Andrews EB

Tazaki K, Cooke IM (1983) Topographical localization of function in the cardiac ganglion of the crab, *Portunus sanguinolentus* (A) 151:311
Tazaki K, Cooke IM (1983) Separation of neuronal sites of driver potential and impulse generation by ligaturing in the cardiac ganglion of the lobster, *Homarus americanus* (A) 151:329
Tazawa H, Nakagawa S (1985) Response of egg temperature, heart rate and blood pressure in the chick embryo to hypothermal stress 155:195
Techel D, Gebauer G, Kohler W, Braumann T, Jastorff B, Rensing L (1990) On the role of Ca^{2+}-calmodulin-dependent and cAMP-dependent protein phosphorylation in the circadian rhythm of *Neurospora crassa* 159:695
Tel-Tzur D, see Dmi'el R
ter Keurs HEDJ, see Akster HA, et al
Terwilliger NB, see Grinich NP, et al
Terwilliger RC, see Grinich NP, et al
Tetens V, Christensen NJ (1987) Beta-adrenergic control of blood oxygen affinity in acutely hypoxia exposed rainbow trout 157:667
Thébault MT (1984) Lactate content and lactate dehydrogenase activity in *Palaemon serratus* abdominal muscle during temperature changes 154:85
Thébault MT, see Raffin JP, et al
Thillart G van den (1986) Energy metabolism of swimming trout (*Salmo gairdneri*). Oxidation rates of palmitate, glucose, alanine, leucine and glutamate 156:511
Thillart G van den, Smit H (1984) Carbohydrate metabolism of goldfish (*Carassius auratus* L.). Effects of long-term hypoxia-acclimation on enzyme patterns of red muscle, white muscle and liver 154:477
Thillart G van den, see Waversveld J van, et al
Thomas DH, Skadhauge E (1989) Function and regulation of the avian caecal bulb: influence of dietary NaCl and aldosterone on water and electrolyte fluxes in the hen (*Gallus domesticus*) perfused in vivo 159:51
Thomas S (1983) Changes in blood acid-base balance in trout (*Salmo gairdneri* Richardson) following exposure to combined hypoxia and hypercapnia 152:53
Thomas S, Fievet B, Barthelemy L, Peyraud C (1983) Comparison of the effects of exogenous and endogenous hypercapnia on ventilation and oxygen uptake in the rainbow trout (*Salmo gairdneri* R.) 151:185
Thomas S, Poupin J (1985) A study of the effects of water carbonate alkalinity on some parameters of blood acid-base status in rainbow trout (*Salmo gairdneri* R.) 156:29
Thompson CS, Yagi KJ, Chen ZF, Tobe SS (1990) The effects of octopamine on juvenile hormone biosynthesis, electrophysiology, and cAMP content of the corpora allata of the cockroach *Diploptera punctata* 160:241
Thompson HW, see Carr WES
Thorey I, Rode I, Harnau G, Hardeland R (1987) Conditionality of phase resetting by inhibitors of 80 S translation in *Gonyaulax polyedra* 157:85
Tichy H, Loftus R (1983) Relative excitability of antennal olfactory receptors in the stick insect, *Carausius morosus* L.: in search of a simple, concentration-independent odor-coding parameter (A) 152:459
Tiling K, see Paul R, et al
Tindall A, see Mortensen A
Tobe SS, see Thompson CS, et al
Tøien Ø, Aulie A, Steen JB (1986) Thermoregulatory responses to egg cooling in incubating bantam hens 156:303
Tøien Ø, see Aulie A
Tomaschko K-H, see Bückmann D, et al
Torre G de la, see Carey C, et al
Tota B, see Acierno R, et al
Tota B, see Agnisola C, et al
Toulmond A, see Conti E
Touraki M, Beis I (1990) Characterization of the calcium paradox in the isolated perfused frog heart: enzymatic, ionic, contractile and electrophysiological studies 160:113
Townsley MD, see Claussen DL, et al
Töyen Ö, see Steen JB, et al
Treistman SN, see Bablanian GM
Trpido-Rosenthal HG, Morse DE (1985) L-α,ω-Diamino acids facilitate GABA induction of larval metamorphosis in a gastropod mollusc (*Haliotis rufescens*) 155:403
Truchot J-P (1984) Water carbonate alkalinity as a determinant of hemolymph acid-base balance in the shore crab, *Carcinus maenas*: a study at two different ambient P_{CO_2} and P_{O_2} levels 154:601
Truchot J-P, see Dejours P
Truman JW, see Huebers HA, et al
Tsoukatos DC, Kapoulas VM (1986) Ion transport and regulation of *Tetrahymena pyriformis* in isotonic and hypotonic media 156:883
Tullis A, see Full RJ
Tur JA, see Esteban S, et al
Turner JS, see Firth BT, et al
Tyler N, see Brix O, et al
Tyler-Jones R, Taylor EW (1986) Urine flow and the role of the antennal glands in water balance during aerial exposure in the crayfish, *Austropotamobius pallipes* (Lereboullet) 156:529

U

Ueda K, see Satou M, et al
Uglem GL, Prior DJ, Hess SD (1985) Paracellular water uptake and molecular sieving by the foot epithelium of terrestrial slugs 156:285
Uhlmann E, see Hoppeler H, et al
Uma Devi V, Prabhakara Rao Y, Prasada Rao DGV (1985) Influence of temperature and size on the respiration of a tropical intertidal gastropod, *Morula granulata* (Duclos), in air and water 156:247
Underwood H (1983) Circadian organization in the lizard *Anolis carolinensis*: a multioscillator system (A) 152:265
Ungell A-L (1985) Uptake of ^{3}H-adrenaline and ^{14}C-noradrenaline into neuronal and extraneuronal tissue compartments in the perfused gas gland of the swimbladder of the Atlantic cod, *Gadus morhua* 155:479
Ungell A-L, see Ehrenström F
Unthank PD, see Pieper DR, et al
Urano A, see Hyodo S, et al
Usherwood PNR, see Preston RR

V

Van Den Sande I, see Witters HE, et al
Van Puymbroeck S, see Witters HE, et al
Van Vliet BN, West NH (1986) Cardiovascular responses to electrical stimulation of the recurrent laryngeal nerve in conscious toad (*Bufo marinus*) 156:363
Van Wormhoudt A, Favrel P, Guillaume J (1989) Gastrin/cholecystokinin-like postprandial variations: quantitative and qualitative changes in the haemolymph of penaeids (Crustacea Decapoda) 159:269
Vanderborght OLJ, see Witters HE, et al
Vanegas H, see Williams B, et al
Vaughan MK, see Hoffman RA, et al
Vedovatti PA, see Prusch RD
Vena VE, Lac TH, Wideman Jr RF (1990) Dietary sodium, glomerular filtration rate autoregulation, and glomerular size distribution profiles in domestic fowl (*Gallus gallus*) 160:7
Vens-Cappell F, see Werner R
Venzi R, see Acierno R, et al
Vermette MG, Perry SF (1988) Adrenergic involvement in blood oxygen transport and acid-base balance during hypercapnic acidosis in the Rainbow Trout, *Salmo gairdneri* 158:107
Vetter RG, see Bagarinao T
Visschedijk AHJ, Girard H, Ar A (1988) Gas diffusion in the shell membranes of the hen's egg: lateral diffusion in situ 158:567
Visschedijk AHJ, see Seymour RS
Vleck CM, see Seymour RS, et al
Vleck D, see Seymour RS, et al
Vogler B, Neuweiler G (1983) Echolocation in the noctule (*Nyctalus noctula*) and horseshoe bat (*Rhinolophus ferrumequinum*) (A) 152:421
Vogler B, see Habersetzer J
Voigt R, see Krattenmacher R, et al
Vreugdenhil E, see Geraerts WPM, et al
Vsiansky P, see Rafael J, et al

W

Waddington KD (1990) Foraging profits and thoracic temperature of honey bees (*Apis mellifera*) 160:325
Wade GN, see Schneider JE, et al
Waite JH (1986) Mussel glue from *Mytilus californianus* Conrad: a comparative study 156:491
Waite JH, Hansen DC, Little KT (1989) The glue protein of ribbed mussels (*Geukensia demissa*): A natural adhesive with some features of collagen 159:517
Wales NAM (1988) Hormone studies in *Myxine glutinosa*: effects of the eicosanoids arachidonic acid, prostaglandin E_1, E_2, A_2,

$F_{2\alpha}$, thromboxane B_2 and of indomethacin on plasma cortisol, blood pressure, urine flow and electrolyte balance 158:621
Walker VK, see Whyard S, et al
Walsberg GE (1988) Consequences of skin color and fur properties for solar heat gain and ultraviolet irradiance in two mammals 158:213
Walters ET, see Cooper BF, et al
Walters ET, see Krontiris-Litowitz JK, et al
Walton MJ, see Bell JG, et al
Walz A, see Walz B, et al
Walz B, Walz A, Sweeney BM (1983) A circadian rhythm in RNA in the dinoflagellate, *Gonyaulax polyedra* 151:207
Wang LCH, see McArthur MD, et al
Wang LCH, see Pehowich DJ
Ward JM, see Armitage KB, et al
Ward MR, see Eddy FB, et al
Warner ACI, see Cork SJ
Watabe S, see Hwang GC, et al
Watt PW, see Heap SP, et al
Waversveld J van, Addink ADF, Thillart G van den (1989) The anaerobic energy metabolism of goldfish determined by simultaneous direct and indirect calorimetry during anoxia and hypoxia 159:263
Webb BA, see Huebers HA, et al
Weber J, see Ferstl S, et al
Weber LJ, see Nichols JW
Weber RE, Jensen FB, Cox RP (1987) Analysis of teleost hemoglobin by Adair and Monod-Wyman-Changeux models. Effects of nucleoside triphosphates and pH on oxygenation of tench hemoglobin 157:145
Weber RE, see Jensen FB
Webster MD, King JR (1987) Temperature and humidity dynamics of cutaneous and respiratory evaporation in pigeons, *Columba livia* 157:253
Webster SG, Keller R (1986) Purification, characterisation and amino acid composition of the putative moult-inhibiting hormone (MIH) of *Carcinus maenas* (Crustacea, Decapoda) 156:617
Wegener G, Beinhauer I, Klee A, Newsholme EA (1987) Properties of locust muscle 6-phosphofructokinase and their importance in the regulation of glycolytic flux during prolonged flight 157:315
Wegener G, see Kamp G
Weibel ER, see Hoppeler H, et al
Weiss S, Goldberg JI, Lukowiak K, Drummond GI (1985) Effect of dopamine and serotonin on cyclic AMP and contractility in the gill of *Aplysia californica* 156:57
Weitzmann H, see Herrera FC, et al
Wells J, see Houlihan DF, et al
Wells KD, see Taigen TL
Wells MJ, see Houlihan DF, et al
Wendler G, see Schmitz B, et al
Wenning A (1983) A sensory neuron associated with the nephridia of the leech *Hirudo medicinalis* L. (A) 152:455
Werner R, Vens-Cappell F (1985) Changes in plasma cortisol during acute cold exposure in euthermic European hedgehogs: thermoregulatory role of the hypothalamo-pituitary-adrenal axis 155:219
Wertz P, see Hoffman RA, et al
West NH, see Van Vliet BN
Weyrauther E (1988) The influence of temperature and oxygen on the photomechanical system of the mealmoth eye 158:421
Wharton DA, Young SR, Barrett J (1984) Cold tolerance in nematodes 154:73
Wheatly MG (1985) The role of the antennal gland in ion and acid-base regulation during hyposaline exposure of the Dungeness crab *Cancer magister* (Dana) 155:445
Wheeler CH, Mundy JE, Goldsworthy GJ (1984) Locust haemolymph lipoproteins visualised in the electron microscope 154:281
White BH, Sekura RD, Rollag MD (1987) Pertussis toxin blocks melatonin-induced pigment aggregation in *Xenopus* dermal melanophores 157:153
White BH, see Binkley S, et al
White FC, see Wickham LL, et al
White RG, Hume ID, Nolan JV (1988) Energy expenditure and protein turnover in three species of wallabies (Marsupialia Macropodidae) 158:237
White RH, Banister MJ, Bennett RR (1983) Spectral sensitivity of screening pigment migration in the compound eye of *Manduca sexta* (A) 153:59
Whittow GC, Pettit TN, Ackerman RA, Paganelli CV (1987) Temperature regulation in a burrow-nesting tropical seabird, the Wedgetailed Shearwater (*Puffinus pacificus*) 157:607
Whyard S, Wyatt GR, Walker VK (1986) The heat shock response in *Locusta migratoria* 156:813
Wichertjes T, see Stöcker W, et al
Wickham LL, Elsner R, White FC, Cornell LH (1989) Blood viscosity in phocid seals: possible adaptations to diving 159:153
Wideman Jr RF (1991) Autoregulation of avian renal plasma flow: contribution of the renal portal system 160:663
Wideman Jr RF, see Laverty G
Wideman Jr RF, see Vena VE, et al
Wieser W, Forstner H (1986) Effects of temperature and size on the routine rate of oxygen consumption and on the relative scope for activity in larval cyprinids 156:791
Wieser W, Platzer U, Hinterleitner S (1985) Anaerobic and aerobic energy production of young rainbow trout (*Salmo gairdneri*) during and after bursts of activity 155:485
Wieser W, see Forstner H
Wieser W, see Putzer VM, et al
Wilhelm E, see Bückmann D, et al
Wilkens JL (1987) Tonic force maintenance after decay of active state in brachiopod smooth adductor muscle 157:651
Wilkens JL, Young RE, DiCaprio RA (1989) Responses of the isolated crab ventilatory central pattern generators to variations in oxygen tension 159:29
Wilkes GE, Janssens PA (1986) Development of urine concentrating ability in pouch young of a marsupial, the tammar wallaby (*Macropus eugenii*) 156:573
Wilkes GE, Janssens PA (1986) Physiological and metabolic changes associated with weaning in the tammar wallaby, *Macropus eugenii* 156:829
Will CL, see Horseman ND
Williams B, Hernández N, Vanegas H (1983) Electrophysiological analysis of the teleostean nucleus isthmi and its relationships with the optic tectum (A) 152:545
Williams EM, Eddy FB (1986) Chloride uptake in freshwater teleosts and its relationship to nitrite uptake and toxicity 156:867
Williams Jr JC, Beyenbach KW (1984) Differential effects of secretagogues on the electrophysiology of the Malpighian tubules of the yellow fever mosquito 154:301
Williams Jr JC, Hagedorn HH, Beyenbach KW (1983) Dynamic changes in flow rate and composition of urine during the postbloodmeal diuresis in *Aedes aegypti* (L.) 153:257
Williams TM, Kooyman GL, Croll DA (1991) The effect of submergence on heart rate and oxygen consumption of swimming seals and sea lions 160:637
Williams TM, see Davis RW, et al
Wilson RP, see Culik B, et al
Wiltschko R, see Füller E, et al
Wine JJ, see Reichert H
Wine JJ, see Reichert H, et al
Wing KD, Rudnicka M, Jones G, Jones D, Hammock BD (1984) Juvenile hormone esterases of Lepidoptera II. Isoelectric points and binding affinities of hemolymph juvenile hormone esterase and binding protein activities 154:213
Wink M, Schneider D (1990) Fate of plant-derived secondary metabolites in three moth species (*Syntomis mogadorensis, Syntomeida epilais,* and *Creatonotos transiens*) 160:389
Winter S, see Markl J
With ND de, see Geraerts WPM, et al
Withers PC, Hillman SS (1983) The effects of hypoxia on pulmonary function and maximal rates of oxygen consumption in two anuran amphibians 152:125
Withers PC, see Hillman SS
Withers PC, see Hillman SS, et al
Witters HE, Van Puymbroeck S, Van Den-Sande I, Vanderborght OLJ (1990) Haematological disturbances and osmotic shifts in rainbow trout, *Oncorhynchus mykiss* (Walbaum), under acid and aluminium exposure 160:563
Woakes AJ, see Butler PJ, et al
Woakes AJ, see Culik B, et al
Wohlers DW, see Kleindienst H-U, et al
Wolf NG, Swift PR, Carey FG (1988) Swimming muscle helps warm the brain of lamnid sharks 157:709
Wolff NA, Kinne R, Elger B, Goldstein L (1987) Renal handling of taurine, L-alanine, L-glutamate and D-glucose in *Opsanus tau*: studies on isolated brush border membrane vesicles 157:573
Wollmuth LP, Crawshaw LI, Panayiotides-Djaferis H (1989) The effects of dopamine on temperature regulation in goldfish 159:83
Wood CM, see Hõbe H, et al
Wood CM, see Playle RC
Wood CM, see Spry DJ
Wood SC, Gatz RN, Glass ML (1984) Oxygen transport in the green sea turtle 154:275

Wood SF, Szuts EZ, Fein A (1990) Metabolism of inositol 1,4,5-trisphosphate in squid photoreceptors 160:293
Woodhouse J, see Hall TR, et al
Woolum JC, Strumwasser F (1983) Is the period of the circadian oscillator in the eye of *Aplysia* directly homeostatically regulated? (A) 151:253
Wortel JF, see Nuboer JFW, et al
Wright PA, Randall DJ, Perry II SF (1989) Fish gill water boundary layer: a site of linkage between carbon dioxide and ammonia excretion 158:627
Wright SH (1985) Multiple pathways for amino acid transport in *Mytilus* gill 156:259
Wright SH, Southwell KM, Stephens GC (1984) Autoradiographic analysis of amino acid uptake by the gill of *Mytilus* 154:249
Wurm TH, Albers C (1989) Interaction of allosteric effectors (ATP, CO_2, H^+) modulating oxygen affinity of the hemoglobin in the carp, *Cyprinus carpio*, in vitro 159:255
Wyatt GR, see Whyard S, et al

Y

Yacoe ME (1983) Maintenance of the pectoralis muscle during hibernation in the big brown bat, *Eptesicus fuscus* 152:97
Yacoe ME (1983) Protein metabolism in the pectoralis muscle and liver of hibernating bats, *Eptesicus fuscus* 152:137
Yagi KJ, see Thompson CS, et al
Yaginuma T, Happ GM (1988) Trehalase from the bean-shaped accessory glands and the spermatophore of the male mealworm beetle, *Tenebrio molitor* 157:765
Yaginuma T, Kobayashi M, Yamashita O (1990) Distinct effects of different low temperatures on the induction of NAD-sorbitol dehydrogenase activity in diapause eggs of the silkworm, *Bombyx mori* 160:277
Yaginuma T, see Indrasith LS, et al
Yamaguchi K, Jürgens KD, Bartels H, Piiper J (1987) Oxygen transfer properties and dimensions of red blood cells in high-altitude camelids, dromedary camel and goat 157:1
Yamaguchi K, see Jürgens KD, et al
Yamaguchi K, see Satou M, et al
Yamashita O, see Indrasith LS, et al
Yamashita O, see Yaginuma T, et al
Yancey PH (1988) Osmotic effectors in kidneys of xeric and mesic rodents: corticomedullary distributions and changes with water availability 158:369
Yano I, see Chinzei Y
Yardley DG (1989) The *amylase* gene-enzyme system of fishes. II. Comparison of amylases from the mosquitofish, rat and *Drosophila* 159:237
Yee Jr HF, Jackson DC (1984) The effects of different types of acidosis and extracellular calcium on the mechanical activity of turtle atria 154:385
Young D, Josephson RK (1983) Mechanisms of sound-production and muscle contraction kinetics in cicadas (A) 152:183
Young D, Josephson RK (1983) Pure-tone songs in cicadas with special reference to the genus *Magicicada* (A) 152:197
Young RE, see Wilkens JL, et al
Young SR, see Wharton DA, et al
Youson JH, Sargent PA, Barrett A, Cheung R (1988) Distribution of ^{55}Fe in juvenile adult lampreys, *Petromyzon marinus* L., following oral intubation of the isotope 157:731

Z

Zakon HH, Meyer JH (1983) Plasticity of electroreceptor tuning in the weakly electric fish, *Sternopygus dariensis* (A) 153:477
Zanders IP, Martelo M-J (1987) Contribution of Na/Na and Cl/Cl exchanges to sodium and chloride fluxes in the crab *Goniopsis cruentata* 157:599
Zanders IP, see Herrera FC, et al
Zange J, Pörtner HO, Grieshaber MK (1989) The anaerobic energy metabolism in the anterior byssus retractor muscle of *Mytilus edulis* during contraction and catch 159:349
Zebe E, see Redecker B
Zeisberger E, see Roth J, et al
Zelick RD, Narins PM (1983) Intensity discrimination and the precision of call timing in two species of neotropical treefrogs (A) 153:403
Zerba E, see Hazel JR
Zerbst-Boroffka I, see Hildebrandt J-P
Zhang Y, see Haupt J, et al
Zhao W, see Haupt J, et al
Zielinski B, see Marui T, et al
Zornow MH, see Ponganis PJ, et al
Zucker H, see Schweigert FJ, et al
Zwaan A de, Bont AMT de, Hemelraad J (1983) The role of phosphoenolpyruvate carboxykinase in the anaerobic metabolism of the sea mussel *Mytilus edulis* L. 153:267
Zwaan A de, see Putzer VM, et al

J Comp Physiol B (1991) 160:729–770

Journal of Comparative Physiology B Biochemical, Systemic, and Environmental Physiology
© Springer-Verlag 1991

Subject Index to Volumes 151–160 (1983–1991)

Up to and including Volume 153, parts A and B appeared together as one journal with parts A and B appearing alternately. Since Volume 154, the two parts have been published as two separate journals. Therefore, A and B were inserted after the volume number in Vols. 151–153. From Volume 154 onwards the author and subject index refers exclusively to the *Journal of Comparative Physiology B: Biochemical, Systemic, and Environmental Physiology*.

A

Acanthis, metabolic strategies for nocturnal survival 156:655 (Reinertsen RE, Haftorn S)
Acanthurus, intestinal glucose transport 152:79 (Ferraris RP, Ahearn GA)
Acari, see *Amblyomma*, *Ornithodoros*
Accessory glands, bean-shaped, trehalase in beetle – 157:765 (Yaginuma T, Happ GM)
Acclimation, paradoxical, in harvester ant 154:399 (MacKay WP, Sassaman CA)
–, seasonal, of bank voles and wood mice 158:157 (Klaus S, et al)
– temperature, effect on protein synthesis in trout tissues 157:201 (Simon E)
Acclimatization, seasonal, in penguin chicks 154:317 (Barré H)
–, substrate metabolism in house finch 154:469 (Marsh RL, et al)
Accommodation in owl eyes 151A:277 (Murphy CJ, Howland HC)
Acheta, dependence of phonotaxis on calling song features 153A:409 (Stout JF, et al)
Acid-base adjustments, temperature effects on lizard – 154:97 (Bickler PE)
– – balance, adrenergic involvement in trout – 158:107 (Vermette MG, Perry SF)
– – –, CO_2 effects on muskrat – 156:339 (MacArthur RA)
– – –, day-night variations in lizard blood 156:853 (Bickler PE)
– – – in trout blood 152:53 (Thomas S)
– – – of crab hemolymph and water carbonate alkalinity 154:601 (Truchot J-P)
– – –, role of crab antennal gland in – 155:445 (Wheatly MG)
– – parameters during torpor in deer mice 159:661 (Nestler JR)
– – regulation, effects of nitrite on carp – 157:533 (Jensen FB, et al)
– – – in active and dormant snail 156:347 (Barnhart MC)
– – – in soft water fish 154:35, 329 (Höbe H, et al); 158:67 (Höbe H, McMahon BR)
– – – of crayfish in acid water 160:483 (Jensen FB, Malte H)
– – state of hamster blood during arousal from hibernation 158:495 (Malan A, et al)
– – status, effect of zinc on trout blood – 154:149 (Spry DJ, Wood CM)
– – –, effects on decreased salinity in salmon blood 160:31 (Maxime V, et al)
– – – in marine invertebrates 155:1, 13 (Pörtner HO, et al)
– – – in sea raven after exercise 156:583 (Milligan CL, Farrell TP)
– – –, intra- and extracellular, temperature effects on locust – 158:763 (Harrison JM)
– – – of air-exposed eel 157:635 (Hyde DA, et al)
– – – of red cells in eel during hypercapnia 159:687 (Hyde DA, Perry SF)
– – – of tench blood in hypoxia-hypercapnia 156:205 (Jensen FB, Weber RE)
– – – of trout blood and water carbonate alkalinity 156:29 (Thomas S, Poupin J)
Acid exposure, physiological effects on rainbow trout 160:563 (Witters HE, et al)
Acidification, intracellular, in hibernating hamster 156:251 (Malan A, et al)
Acidosis, effect on intrapulmonary chemoreceptor discharge frequency 154:393 (Barnes GM, Burger RE)
–, effect on turtle atria 154:385 (Yee Jr HF, Jackson DC)
Acipenser, muscle pyruvate kinase 153:247 (Guderley H, et al)
Actin-modulating protein from earthworm muscle 157:615 (D'Haese J, Hinssen H)
Action potentials, cardiac, in marsupials 158:759 (Campbell TJ)
Activity, constraints on maximal – in spiders 158:437, 449 (Prestwich KN)
–, physiological correlates of – in lizards 154:113 (Bennett AF, et al)
Actomyosin in earthworm gizzard muscle 157:598 (Carlhoff D, D'Haese J)
Adaptation to hydrostatic pressure in marine fish 154:443 (Siebenaller JF))
Adaptive changes in freshwater amphipod sodium regulation 160:85 (Harris RR, Bayliss D)
Adelie penguin, see *Pygoscelis*
Adenosine -monophosphate (AMP), chemoattractant for a marine shrimp 153A:47 (Carr WES, Thompson HW)
– receptors in marine fishes living at different depths 157:267 (Murray TF, Siebenaller JF)
–, role in isolated frog heart 156:839 (Lazou A, Beis Is)
– triphosphatatase, see ATPase
– triphosphate (ATP), effect on hemoglobins from aquatic Amphibia 155:353 (Lima AAB, et al)
Adherence of granulocytes 159:481 (Ehlers D, et al)
Adhesive foam from mussel byssus 156:491 (Waite JH)
– protein of mussel ribbed muscle 159:517 (Waite JH, et al)
Adipokinetic hormone, control of ice nucleators in insect larvae 160:51 (Lei Xu, et al)
Adipose tissue, see also brown adipose tissue (BAT)
– –, vitamin E and fatty acid in seal – 159:649 (Schweigert FJ)
ADP-ribosyltransferase in trout and man 157:567 (Burtscher HJ, et al)
Adrenal catecholamines, species differences in distribution 155:367 (Racz K, et al)
Adrenaline, effect on force frequency in trout myocardium 159:61 (Hove-Madsen I, Gesser H)
–, effects on tench blood properties 157:51 (Jensen FB)
Adrenergic, see also catecholamines
– control of blood oxygen affinity in trout during hypoxia 157:667 (Tetens V, Christensen NJ)
– – of pigeon cutaneous evaporation 159:97 (Marder J, Raber P)
– – of trout branchial chloride transport 154:269 (Perry SF, et al)
– mandibular saliva in red kangaroo 159:601 (Beal AM)
– neurotransmission in coelenterates 155:251 (Carlberg M, Rosengren E)
– receptor blockade, effects on gas exchange in dogfish 158:39 (Metcalfe JD, Butler PJ)

Adrenergic receptors and Cl secretion in a teleost 154:343 (May SA, et al); 156:183 (May SA, Degnan KJ)
– regulation of eel red cell properties during hypercapnia 159:687 (Hyde DA, Perry SF)
– – of ion transport in fish gills 155:471 (Davis MS, Shuttleworth TJ)
– – of reptile hepatic glycogenolysis 159:323 (Janssens PA, Giuliano M)
– – of trout blood oxygen affinity 152:67 (Nikinmaa M)
– responses, interactions with surfactants in trout gill 157:429 (Stagg RM, Shuttleworth TJ)
– –, role in bass blood oxygen transport 154:365 (Nikinmaa M, et al)
Adrenoceptors in salamander gill 155:591 (Malvin GM)
Aedes, electrophysiology of Malpighian tubules 154:301 (Williams Jr JC, Beyenbach KW)
–, post-bloodmeal diuresis 153:257 (Williams JC, et al)
Aepyprymnus, thermoregulation 153:175 (Rübsamen U et al)
Aerobic capacity and exercise in a spider 155:529 (Anderson JF, Prestwich KN)
– – of the Gila Monster 151:119 (John-Alder HB, et al)
– energy production in young trout 155:485 (Wieser W, et al)
Aethomys, physiological effects of high fibre diet 155:211 (Buffenstein R)
Agapornis, temperature effects on ventilation and metabolism 159:561 (Bucher TL, Morgan KR)
Age, influence on melatonin action in birds 158:601 (Mahata SK, et al)
Ageing, effect on oxygen free radicals in frog liver 160:655 (López-Torres M, et al)
Agglutinin, opsonic, in an ascidian 154:509 (Coombe DR, et al)
Agglutinins from snail hemolymph and albumin gland 159:443 (Mullainadhan P, Renwrantz L)
Agkistrodon, infrared tectal thresholds 151A:461 (Cock Buning T de)
Agnatha, see lamprey
Air breathing, effect on crocodile cardiovascular dynamics 157:381 (Grigg GC, Johansen K)
– – fish, effects of hypoxia and hypercapnia in – 156:425 (Glass ML, et al)
– exposure, effects on eel blood properties 157:635 (Hyde DA, et al)
– velocity, effect on fly wing stroke frequency 153A:289 (Otzen H, Kuiper JW)
Alanine metabolism in see anemone 154:181 (Kasschau MR, et al)
– transport by lobster BBMW 156:537 (Ahearn GA, et al)
–, transport through fish renal brush border membranes 157:573 (Wolff NA, et al)
Albumin gland, agglutinins from snail – 159:443 (Mullainadhan P, Renwrantz L)
Alcohol dehydrogenase activity in crucian carp 158:479 (Nilsson GE)
Aldehyde dehydrogenase activity in crucian carp 158:479 (Nilsson GE)
Aldosterone, effect on water and ion fluxes in hen caecum 159:51 (Thomas DH, Skadhauge E)
–, tight junction regulation in rabbit colon by – 160:381 (Hoffmann B, et al)
Alectoris, effects of temperature, altitude and ventilation in – 157:129 (Chappell MA, Bucher TL)
Alectura, gas exchange in incubation mound 156:773 (Seymour RS, et al)
Alkaline phosphatase, inhibition and disposition in trout intestine 157:461 (Gasser KW, Kirschner LB)
– –, response to osmoregulatory changes in trout 157:469 (Gasser KW, Kirschner LB)
– phosphatases in silkworm midgut 159:123 (Okada N, et al)
Alkalinization, luminal, in goby intestine 156:803 (Dixon JM, Loretz CA)
Alkaloids, role in diet of moth larvae 160:389 (Wink M, Schneider D)
Allantoin, crystalline, in desert rodent urine 155:493 (Buffenstein R, et al)
Alligator, temperature effects on development 159:183 (Deeming DC, Ferguson MWJ)
Allometric relations in bee clusters 156:143 (Southwick EE)
– relationships of snake resting metabolic rates 157:227 (Chappell MA, Ellis TM)
Allometry of hibernation performance 156:13 (French AR)
– of mammalian and reptilian mitochondria 156:3 (Else PL, Holbert AJ))
Allosteric effectors modulating carp hemoglobin O_2 affinity 159:255 (Wurm Th, Albers C)
– transitions in fish hemoglobin 157:145 (Weber RE, et al)
Altidude, effect on deer mice metabolism 159:453 (Hayes JP)
Altitude, effect on chuckar ventilation and gas exchange 157:129 (Chappell MA, Bucher TL)
–, effect on deer mouse respiration 155:751 (Chappell MA)
–, effect on gas exchange in bird eggs 159:389 (Carey C, et al)
–, effect on oxygen transfer by red blood cells 157:1 (Yamaguchi K, et al)
–, effect on ventilation and oxygen consumption in house finches 158:57 (Clemens DT)
–, effects on camelid oxygen supply 158:469 (Jürgens KD, et al)
Aluminium, effect on physiology of crayfish in acid water 160:483 (Jensen FB, Malte H)
Aluminum chemistry in trout gill 159:539 (Playle RC, Wood CM)
– exposure, physiological effects on rainbow trout 160:563 (Witters HE, et al)
Amazona, respiratory patterns 155:269 (Bucher TL)
Amblyomma, metabolism of ecdysteroids 157:689 (Connat J-L, et al)
Ambystoma, vascular adrenoceptors in gill 155:591 (Malvin GM)
–, vasoactivity of gills and pulmonary artery 155:241 (Malvin GM)
Amelogenin gene similarity in vertebrates 160:469 (Lyngstadaas SR, et al)
Amines, effects on evoked-potentials in bee brain 151A:469 (Mercer AR, Erber J)
Amino acid receptors, effect of temperature on crayfish – 152A:405 (Hatt H)
– – transport in mussel gill 156:259 (Wright SH)
– – – in sea urchin larvae 156:121 (Davis JP, et al)
– – – in *Tetrahymena* 156:891 (Davis JP, Stephens GC)
– – –, intestinal, role of γ-glutamyl transpeptidase on – in salmon 157:161 (Bell JG, et al)
– – uptake by mussell gill 154:249 (Wright SH, et al)
– acids, DOPA in polychaete tube bioadhesive 158:317 (Jensen RA, Morse DE)
– –, free, facilitation in accumulation of – in a copepod 158:99 (Goolish EM, Burton RS)
– –, gustatory responses of trout palate to – 153A:423 (Marui T et al)
– –, net flux in *Tetrahymena* 152:27 (Davis JP, Stephens GC)
– –, specificity of carp facial taste system 153A:299 (Marui T, et al)
– –, tyrosine hydroxylase in crayfish CNS 155:603 (Laxmyr L)
Ammonia excretion across fish gills 158:627 (Wright PA, et al)
Ammospermophilus, solar heat gain and ultraviolet irradiance effects 158:213 (Walsberg GE)
Amoeba, phagocytosis and calcium 159:287 (Prusch RD, Vedovatti PA)
AMP, cyclic, effects of DA and 5-HT on – in *Aplysia* gill 156:57 (Weiss S, et al)
–, –, modulation of coelenterate peristalsis by – 159:491 (Anctil M)
–, –, octopaminergic regulation of content of cockroach corpora allata 160:241 (Thompson CS, et al)
–, –, stimulates ouabain-insensitive ion movement in shark rectal gland 154:139 (Silva P, et al)
– deaminase in trout gill 154:55 (Raffin J-P)
Amphibia, activity of tectal neurons in *Salamandra* 153A:85 (Finkenstädt T, Ewert J-P)
–, adaptations of *Hyperolius* to arid environment 158:537 (Schmuck R, et al)
–, ageing and oxygen free radicals in *Rana* liver 160:655 (López-Torres M, et al)
–, auditory habituation in *Rana* 151A:423 (Megela AL, Capranica RR)
–, calcium paradox in isolated *Rana* heart 160:113 (Touraki M, Beis I)
–, cardiovascular responses of *Rana* to spinal thermal stimuli 156:611 (Nagai M, Iriki M)
–, centrally elicited behavior and autonomic adjustments in *Bufo* 155:381 (Cordeiro de Sousa MB, Hoffmann A)
–, contractile performance of anuran sartorius muscle 151:127 (Renaud JM, Stevens ED)
–, control of thermoregulatory evaporation in *Chiromantis* 158:643 (Kaul R, Shoemaker VH)
–, cryoprotectant synthesis in *Rana* 156:191 (Storey JM, Storey KB)
–, cutaneous gas exchange and evaporative water loss in xeric-adapted frogs 157:423 (Stinner JN, Shoemaker VH)

dehydration and thermal stress in three frog species 154:579 (Beuchat CA, et al)
energetics of *Hyla* vocalization 155:163 (Taigen TL, Wells KD)
energy metabolism of *Rana* erythrocytes 155:109 (Kaloyianni-Dimitriades M, Beis I)
enzymatic adaptation of *Discoglossus* to hyperoxia and oxidative stress 158:583 (Barja de Quiroga G, et al)
erythrocythemia and oxygen transport by *Bufo* blood 155:577 (Hillman SS, et al)
flow effects on *Bufo* cardiac vagus 155:571 (Courtice GP, McCloskey DI)
freeze tolerance in *Rana* 155:29 (Storey KB, Storey JM)
freezing and glycolysis in *Rana* liver 157:373 (Storey KB)
gas exchange in *Pseudophryne* eggs 157:477 (Seymour RS, Bradford DF)
glycogen phosphorylase from *Rana* brain 156:77 (Kamp G, Wegener G)
hemorrhage and hypernatremia in *Bufo* and *Rana* 157:807 (Hillman SS, Withers PC)
hyperosmolal effects on cardiac muscle in *Bufo* and *Rana* 154:325 (Hillman SS)
intensity discrimination and call timing in *Eleutherodactylus* 153A:403 (Zelick RD, Narins PM)
laryngeal nerve stimulation in *Bufo* 156:363 (Van Vliet BN, West NH)
lens membrane permeability in *Rana* 154:333 (Jacob TJC, Duncan G)
motion perception in *Bufo* 152A:241 (Burghagen H, Ewert J-P)
motor patterns in *Triturus* embryos 152A:535 (Soffe SR, et al)
nervous control of *Bufo* skin permeability 154:573 (Segura ET, et al)
pertussis toxin blocks melatonin action in *Xenopus* 157:153 (White BH, et al)
pH and ATP effects on hemoglobins 155:353 (Lima AAB, et al)
prolactin binding in *Bufo* brain 155:611 (Lüthy IA, et al)
pulmonary function and metabolism in anurans 152:125 (Withers PC, Hillman SS)
pyruvate kinase isoenzymes from *Rana* 156:691 (Fournier P, Guderley H)
reflex control of diuresis in *Bufo* 159:91 (Petriella S, et al)
renal organic anion transport in *Necturus* 154:119 (Khalsa BDS, et al)
role of adenosine in isolated *Rana* heart 156:839 (Lazou A, Beis Is.)
sensory systems of *Triturus* embryos 152A:529 (Roberts A, Clarke JDW)
sexual differences in *Xenopus* metabolism 159:473 (Merkle S)
skin mucus of *Rana* 155:81, 97 (Stith BJ)
sodium absorption in *Xenopus* colon 160:161 (Krattenmacher R, et al)
sodium uptake in *Rana* tadpoles exposed to low pH water 155:649 (Freda J, Dunson WA)
stress and temperature effects on *Notophthalmus* leukocytes 153A:81 (Bennett MF, Daigle KR)
temperature and pH effects on anuran muscle LDH 160:105 (Mendiola P, De Costa J)
–, transferrin-receptor interactions 157:363 (Lim BC, et al)
–, vascular adrenoceptors in *Ambystoma* gill 155:591 (Malvin GM)
–, vasoactivity of *Ambystoma* gills and pulmonary artery 155:241 (Malvin GM)
–, vestibular compensation in *Xenopus* 151A:487 (Rayer B, et al)
–, visual pattern discrimination in *Salamandra* 153A:99 (Finkenstädt T, Ewert J-P)
–, water retention in burrowed *Bufo* 156:735 (Katz U, Gabbay S)
Amphibolorus, hormonal regulation of hepatic carbohydrate metabolism 159:323 (Janssens PA, Giuliano M)
Amphipod, see *Corophium*, *Talitrus*
Amphipods, talitroidean, haemocyanin oxygen binding 160:195 (Spicer JI, McMahon BR)
Amylase activity, change in heat exposed hen 156:297 (Osman AM)
– gene-enzyme system of fishes 159:237 (Yardley DG)
Anaerobic energy production in young trout 155:485 (Wieser W, et al)
Anaerobiosis, different dehydrogenases in jumping cockle during – 156:873 (Meinardus-Hager G, Gäde G)
–, glycolytic enzyme binding of mollusc muscle during – 158:771 (Lazou A, et al)
–, glycolytic enzyme binding und metabolic control in whelks 156:635 (Plaxton WC, Storey KB)
–, heat balance study of – in *Tubifex* 154:587 (Famme P, Knudsen J)
– in marine invertebrates 155:1, 13 (Pörtner HO, et al)
–, opine formation in marine invertebrates 159:617 (Kreutzer U, et al)
–, pyruvate kinase modification in limpet during – 160:529 (Gaitanaki C, et al)
Anas, bradycardia during dive 154:243 (Mangalam HJ, Jones DR)
–, isosmotic secretion in salt gland 156:213 (Marshall AT, et al)
–, locomotory energetics 155:373 (Baudinette RV, Gill P)
–, osmoregulatory effects of angiotensin II 156:315 (Gray DA, et al)
–, salt gland control by cephalic osmoreceptors 154:449 (Gerstberger R, et al)
Angiotensin II, effects in conscious hamsters 158:703 (Rettig R, et al)
–, effects on osmoregulation in a bird with salt glands 156:315 (Gray DA, et al)
–, effects on vasomotion in hamsters 159:577 (Rettig R, et al)
–, osmoregulatory effects in kelp gull 158:651 (Gray DA, Erasmus T)
Anguilla, adrenergic regulation during hypercapnia 159:687 (Hyde DA, Perry SF)
–, atrial natriuretic peptide in heart 160:119 (Takei Y, et al)
–, cardiac effects of neurohypophysial hormones 160:213 (Chiu KW, Lee YC)
–, catecholamines 155:285 (Epple A, Nibbio B)
–, catecholamines and gill water influx 157:327 (Bennett MB, Rankin JC)
–, changes in osmotic water permeability of gills 154:1 (Ogasawara T, Hirano T)
–, intestinal folds and osmoregulation 158:45 (Simonneaux V, et al)
–, intestinal ion and water transport 155:311 (Ando M)
–, intestinal mucus and ion transport 157:295 (Simonneaux V, et al)
–, oesophageal mucus as a diffusion barrier 157:187 (Simonneaux V, et al)
–, physiological consequences of aerial exposure 157:635 (Hyde DA, et al)
–, prolactin effect on thyroid function 154:199 (de Luze A, et al)
Anhydrase, carbonic, see carbonic anhydrase
Anions, organic, renal transport in salamander 154:119 (Khalsa BDS, et al)
Anisotonicity effects on dogfish rectal gland 154:561 (Kleinzeller A, Goldstein J)
Annelida, actin-modulating protein from *Lumbricus* muscle 157:615 (D'Haese J, Hinssen H)
–, anaerobic energy metabolism in *Lumbriculus* 159:707 (Putzer VM, et al)
–, anaerobiosis in *Tubifex* 154:587 (Famme P, Knudsen J)
–, anoxia and regulatory enzymes in marine – and earth worms 160:201 (Michaelidis B, et al)
–, carbon dioxide and ventilation in *Arenicola* 156:797 (Conti E, Toulmond A)
–, cytotoxic activity in *Eisenia* coelomic fluid 157:77 (Kauschke E, Mohrig W)
–, effects on circulation in *Hirudo* 158:553 (Hildebrandt J-P, Zerbst-Boroffka I)
–, fever in *Nephelopsis* 159:281 (Cabanac M)
–, myosin isoforms in *Lumbricus* body wall muscle 157:171 (D'Haese J, Carlhoff D)
–, nephridial nerve cell in *Hirudo* 152A:455 (Wenning A)
–, silk-like biodahesive of *Phragmatopoma* tubes 158:317 (Jensen RA, Morse DE)
–, slow type myosin in *Lumbricus* gizzard muscle 157:589 (Carlhoff D, D'Haese J)
–, soluble calcium-binding protein from *Lumbricus* muscle 158:325 (Huch R, et al)
–, volume regulation in *Clitellio* 154:125 (Ferraris JD)
– volume regulation in *Glycera* coelomocytes 151:133 (Costa CJ, Pierce SK)
– volume regulation in *Nereis* 154:607 (Dykens JA, Mangum CP)
Anolis, circadian rhythm 152A:265 (Underwood H)
Anoxia, anaerobic energy metabolism of goldfish during – 159:263 (Waversveld J van, et al)
–, effect on regulatory enzymes of marine and earth worms 160:201 (Michaelidis B, et al)
–, effect on trout heart muscle 154:523 (Nielsen KE, Gesser H)
–, effects on development and metabolism of flesh fly pupae 160:683 (Kukal O, et al)
–, effects on glycolysis in cockles 159:195 (Meinardus-Hager G, et al)
–, effects on insect cryo-protectant synthesis 160:77 (Storey JM, Storey KB)
–, glycolytic control in goldfish during – 157:813 (Rahman MS, Storey KB)
–, long-term, in brine shrimp embryos 160:357 (Hand SC)

Anoxia, tolerance in an oligochaete 159:707 (Putzer VM, et al)
Antechinomys, thermoregulation 156:751 (Geiser F)
Antelope, see *Rhynchotragus*
Antennal gland, function in crab acid-base and ion regulation 155:445 (Wheatly MG)
– glands, role in water balance of dehydrated crayfish 156:529 (Tyler-Jones R, Taylor EW)
Antennary organ, role in amphipod water balance 156:331 (Taylor PM, Harris RR)
Antheraea, pheromone-binding protein 160:503 (Raming K, et al)
Antibodies, monoclonal, to spider hemocyanin 159:139 (Markl J, Winter S)
Antidiuretic reflex control in toads 159:91 (Petriella S, et al)
Antifreeze polypeptides from Newfoundland ocean pout 155:81 (Hew CL, et al)
– protein production, induction by juvenile hormone in a beetle larva 151:233 (Horwath KL, Duman JG)
Ants, see also *Pogonomyrmex, Solenopsis*
–, mating flight glycogen storage 160:207 (Passera L, Keller L)
Apis, amines on brain evoked potentials 151A:469 (Mercer AR, Erber J)
–, color effects in spatial vision 151A:441 (Menzel R, Lieke E)
–, conversion of wax scales into comb wax 156:95 (Kurstjens SP, et al)
–, flight physiology 158:711 (Jungmann R, et al), 719 (Feller P, Nachtigall W), 729 (Nachtigall W, et al), 739 (Rothe U, Nachtigall W)
–, foraging profits and thoracic temperature 160:325 (Waddington KD)
–, landmark learning 151A:521 (Cartwright BA, Collett TS)
–, metabolism in clusters 156:143 (Southwick EE)
–, synapse frequency after chromatic deprivation 151A:477 (Hertel H)
–, thermal behavior on feeding place 158:135 (Schmaranzer S, Stabentheiner A)
–, thermoregulation of colony 159:551 (Fahrenholz L, et al)
Aplysia, atrial gland peptides 156:43 (Nagle GT, et al)
–, circadian organization 153A:133 (Lickey ME, et al)
–, DA, 5-HT and cAMP in gill 156:57 (Weiss S, et al)
–, E-C coupling in smooth muscle 157:659 (Reilly WM, Peretz B)
–, effects of humoral trauma factors 159:211 (Krontiris-Litowitz JK, et al), 225 (Cooper BF, et al)
–, eye circadian period 151A:253 (Woolum JC, Strumwasser F)
–, hyperpolarization of cell R15 and hemolymph composition 155:297 (Bablanian GM, Treistman SN)
–, peptides in atrial gland 154:435 (Kelner KL, et al)
–, temperature dependence of egg-laying 156:21 (Pinsker HM, Parsons DW)
–, temperature modulation of hormone synthesis 154:545 (Berry RW)
Apodemus, brown adipose tissue 158:157 (Klaus S, et al)
–, oxygen consumption after training and inactivation 155:51 (Hoppeler H, et al)
Apolipoprotein, effects on insect ice nucleator activity 159:71 (Neven LG, et al)
Aptenodytes, body temperature and plasma fuels during fasting 156:521 (Groscolas R)
–, plasma hormones and metabolites during fasting 158:395 (Le Ninan F, et al)
–, seasonal acclimatization 154:317 (Barré H)
Arachidonic acid, effects on hagfish blood and urine 158:621 (Wales NAM)
Arachnida, 2-ketones in *Typopeltis* defense secretion 157:883 (Haupt J, et al)
–, constraints on maximal activity 158:437, 449 (Prestwich KN)
–, cuticular permeability of *Latrodectus* 159:243 (Hadley NF, Quinlan MC)
–, heart and circulatory functions in *Eurypelma* 158:673 (Paul R, et al)
–, hemolymph composition in *Eurypelma* 152:73 (Schartau W, Leidescher T)
–, heterogeneity of *Cupiennius* leg muscle 157:285 (Maier L, et al)
–, maximal aerobic exercise in *Brachypelma* 155:529 (Anderson JF, Prestwich KN)
–, monoclonal antibodies to *Eurypelma* hemocyanin 159:139 (Markl J, Winter S)
–, respiration in *Eurypelma* 157:209 (Paul R, et al)
–, spider heart-rates and locomotion 157:451 (Bromhall C)
–, vibratory stimuli and *Cupiennius* behavior 152A:347, 361 (Hergenröder R, Barth FG)
Arachnids, book lung function in – 159:409 (Paul R, et al), 419 (Paul R, Fincke T), 433 (Fincke T, Paul R)
Arctic adaptation of oxygen transport in blood of reindeer and muskox 159:655 (Brix O, et al)
Arenicola, carbon dioxide and ventilation 156:797 (Conti E, Toulmond A)
Arginase activity in silkworm 155:653 (Aigaki T, Osanai M)
Arginine kinase, mitochondrial, from horseshoe crab heart 160:449, 459 (Doumen C, Ellington WR)
– vasopressin, role in hamster thermal adaptation 160:153 (Roth J, et al)
Arid environment, adaptations of reed frogs to – 158:537 (Schmuck R, et al)
Arrhenius parameters in endotherms 155:711 (Geiser F, McMurchie EJ)
Artemia, arrestment of carbohydrate metabolism in embryos 156:451 (Carpenter JF, Hand SC)
–, chitin biosynthesis 159:777 (Horst MH)
–, long term anoxia in embryos 160:357 (Hand SC)
–, oxygen binding by hemoglobin 156:355 (Davis BJ, Riggs AF)
Arterial hypotension in ducks adapted to high salt intake 160:127 (Brummermann M, Simon E)
Arthropoda, see Acari, Arachnida, Crustacea, Insecta, Ixodoidea, scorpions
Ascaris, 2-methylvalerate formation in mitochondria 154:349 (Rioux A, Komuniecki R)
Ascidia, particle recognition by *Botrylloides* haemocytes 154:509 (Coombe DR, et al)
Ascorbate absorption and metabolism in carp 160:549 (Dabrowski K)
Asilidae, thermoregulation and energetics 155:561 (Morgan KR, et al)
Astacus, intracellular pH regulation in neurons 157:435 (Gaillard S, Rodeau JL)
–, physiology in acid water 160:483 (Jensen FB, Malte H)
–, regulation of oxygen consumption 155:43 (Massabuau JC, Burtin B)
–, ventilatory CO_2 drive 154:65 (Massabuau J-C, et al)
–, ventilatory CO_2 reflex 156:115 (Massabuau JC, Burtin B)
ATPase activity of temperature acclimated carp myosin 160:233 (Hwang GC, et al)
–, mitochondrial, in crab gill 160:223 (Siebers D, et al)
–, pressure adaptation of teleost gill Na^+/K^+ 160:431 (Gibbs A, Somero GN)
Atrial gland, biosynthesis of peptides in *Aplysia* – 154:435 (Kelner KL, et al)
– –, family of peptides in *Aplysia* – 156:43 (Nagle GT, et al)
– natriuretic peptide in eel heart 160:119 (Takei Y, et al)
– peptides, effects on octopus systemic heart 158:637 (Agnisola C, et al)
Auditory brainstem responses in squirrels 159:159, 167 (Hamill NJ, et al)
– directional information in crickets 153A:523 (Boyd P, Lewis B)
– fibers, central projections of tettigoniid – 151A:389 (Oldfield BP)
– habituation in the bullfrog 151A:423 (Megela AL, Capranica RR)
– receptors, discrete depolarizations 152A:475 (Hill KG)
– –, membrane potentials 152A:483 (Hill KG)
– system, development in the locust 151A:499 (Boyan GS)
Austrapotamobius, amino acid receptors 152A:405 (Hatt H); 155:219 (Hatt H)
–, pyridine-sensitive neurons 152A:395 (Hatt H); 154:855 (Hatt H, Schmiedel-Jakob I)
–, purine bases affect haemocyanin oxygen affinity 156:431 (Morris S, et al)
–, urine production during dehydration 156:529 (Tyler-Jones R, Taylor EW)
Autonomic adjustments, effects of electrical stimulation of CNS in toads on – 155:381 (Cordeiro de Sousa MB, Hoffmann A)
Autoregulation of avian renal plasma flow 160:663 (Wideman Jr RF)
Aves, accommodation in owl eyes 151A:277 (Murphy CJ, Howland HC)
–, acidosis and intrapulmonary chemoreceptor discharges in chicken 154:393 (Barnes GM, Burger RE)
–, antidiuretic hormone in Pekin duck 151:241 (Gray DA, Simon E)
–, blood oxygen transport in *Passer* 155:277 (Maginniss LA)
–, blood volume and salt gland secretion in *Larus* 157:261 (Hughes MR)
–, body temperature and plasma fuels in fasting *Aptenodytes* 156:521 (Groscolas R)

bradycardia in *Anas* and *Phalacrocorax* 154:243 (Mangalam HJ, Jones DR)
brain temperature and dehydration in *Gallus* 154:295 (Arad Z, et al)
brain temperature in *Stellula* 157:583 (Burgoon DA, et al)
brain temperature regulation in *Gallus* 153:241 (Midtgård U, et al)
brainstem effects on *Coturnix* respiratory movements 155:37 (Davey NJ, Seller TJ)
breathing patterns in fowl 156:109 (Brakkenbury J, Gleeson M)
capillarity and diffusion distances in skeletal muscles 160:583 (Snyder GK)
cardiac modulation of IPC in ducks 159:597 (Adamson TP, et al)
changes in amylase and lipase activity in heat exposed hens 156:297 (Osman AM)
cold vasodilatation in Bantam hen brood patch 155:703 (Mitgård U, et al)
compass orientation in homing pigeons 153A:55 (Füller E, et al)
control of cutaneous evaporation in pigeon 159:97 (Marder J, Raber P)
control of excretory water loss during dehydration in *Passer* 158:353 (Goldstein DL, Braun EJ)
convection and thermoregulation in Antarctic seabirds 159:313 (Chappell MA, et al)
crop milk proteins in pigeons 154:237 (Horseman ND, Will CL)
cutaneous and respiratory evaporation in *Columba* 157:253 (Webster MD, King JR)
dietary sodium and GFR autoregulation in *Gallus* 160:7 (Vena VE, et al)
drinking in *Coturnix* 158:519 (Takei Y, et al)
effects on activity rhythms in *Carpodacus* 153A:413 (Fuchs JL)
electrical parameters and Na concentration in *Gallus* colon 158:19 (Grubb BR, Bentley PJ)
energetic cost of moult in *Eudyptes* 155:515 (Brown CR)
energy requirements of *Pygoscelis* chicks 160:61 (Culik B, et al)
flight control muscle activity in pigeon 153A:111 (Bilo D, Bilo A)
function of caecal bulb in *Gallus* 159:51 (Thomas DH, Skadhauge E)
gas exchange in *Fulica* eggs 159:389 (Carey C, et al)
gas exchange in incubation mounds of megapode birds 156:773 (Seymour RS, et al)
glucocorticoid actions in *Gallus* colon 159:131 (Grubb BR, Bentley PJ)
heat balance of *Sturnus* and *Onychognathus* 155:395 (Dmi'el R, Tel-Tzur D)
hormones, reproduction and moult in Ploceidae 156:641 (Dittami JP)
influence of age and splanchnic nerve on melatonin action 158:601 (Mahata SK, et al)
ionic permeability of fowl intestine 157:181 (Grubb BR, et al)
isosmotic secretion in *Anas* salt gland 156:213 (Marshall AT, et al)
lateral diffusion in hen's eggshell membranes 158:567 (Visschedijk AHJ, et al)
–, locomotory energetics of *Eudyptula* and *Anas* 155:373 (Baudinette RV, Gill P)
–, loss of SNAT activity in chicken pineal gland 159:583 (Rodriguez-Cabello JC, et al)
–, metabolic strategies of northern birds for nocturnal survival 156:655 (Reinertsen RE, Haftorn S)
–, metabolism, temperature and breathing in *Urocolius* 157:801 (Prinzinger R)
–, microclimate of *Struthio* nests 157:845 (Swart D, Rahn H)
–, mobilization of minerals by *Xanthocephalus* embryos 160:649 (Packard MJ, Packard GC)
–, nocturnal hypothermia in *Parus* 151:109 (Reinertsen RE, Haftorn S)
–, opiates and body temperature in *Coturnix* 160:699 (Kavaliers M)
–, osmoregulation in dehydrated heat exposed fowl 155:227 (Arad Z, et al)
–, osmoregulatory effects of angiotensin II 156:315 (Gray DA, et al); 158:651 (Gray DA, Erasmus T)
–, osmoregulatory hormones in ducks during electrolyte imbalance 158:9 (Erbe K-H, et al)
–, osmotic balance and pituitary function in domestic fowl 156:103 (Hall TR, et al)
–, osmotic release of hormones in fowl 156:399 (Arad Z, et al)
–, pectoralis muscle in migratory birds 158:165 (Lundgren BO, Kiessling K-H)
–, pigeon flight in a wind tunnel 157:91 (Rothe H-J, Nachtigall W), 99 (Rothe H-J et al), 111 (Hirth K-D, et al), 117 (Biesel W, Nachtigall W)
–, pineal melatonin secretion in *Gallus* 158:381 (Sigüenza AF, et al)
–, pineal NAT activity in *Gallus* 159:37 (Binkley S, et al)
–, plasma hormones in dehydrated fowl 156:383 (Arnason SS, et al)
–, poikilothermy in young *Delichon* 159:379 (Steen JB, et al)
–, potassium transport across *Gallus* intestine 160:17 (Grubb BR, Bentley PJ)
–, reduction of metabolism during torpor 158:25 (Geiser F)
–, regional gas exchange in chicken eggs 158:229 (Seymour RS, Visschedijk AHJ)
–, renal plasma flow autoregulation in fowl 160:663 (Wideman Jr RF)
–, renal responses to salt loading in *Sturnus* 159:401 (Laverty G, Wideman RF Jr)
–, respiratory patterns in *Amazona* 155:269 (Bucher TL)
–, response of chick embryo to hypothermal stress 155:195 (Tazawa H, Nakagawa S)
–, responses to heat stress in two *Coturnix* species 158:205 (Roberts JR, Baudinette RV)
–, responses to spinal cooling in chickens 155:103 (Barnas GM, et al)
–, salt gland control by cephalic osmoreceptors in *Anas* 154:449 (Gerstberger R, et al)
–, salt intake and arterial hypotension in ducks 160:127 (Brummermann M, Simon E)
–, seasonal acclimatization in king penguin chicks 154:317 (Barré H)
–, semimonthly rhythm of body weight in *Sylvia* 156:859 (Bairlein F)
–, short-term fasting effects on metabolism and hypothermia in *Parus* 154:23 (Reinertsen RE, Haftorn S)
–, short-term fasting in *Aptenodytes* chicks 158:395 (Le Ninan F, et al)
–, sleep and metabolic rate in *Eudyptula* 154:487 (Stahel CD, et al)
–, substrate metabolism in seasonally acclimatized *Carpodacus* 154:469 (Marsh RL, et al)
–, temperature, altitude and ventilation effects in *Alectoris* 157:129 (Chappell MA, Bucher TL)
–, temperature effects on *Agapornis* ventilation and metabolism 159:561 (Bucher TL, Morgan KR)
–, thermoregulation in arctic seabirds 157:703 (Gabrielsen GW, et al)
–, thermoregulation in *Coturnix* 157:625 (Saarela S, Heldmaier G)
–, thermoregulation in pigeons 154:47 (Saarela, et al)
–, thermoregulation in *Puffinus* 157:607 (Whittow GC, et al)
–, thermoregulation in *Pygoscelis* 156:615 (Taylor JRE); 157:783 (Chappell MA, Souza SL)
–, thermoregulatory responses to egg cooling in incubating hens 156:303 (Tøien Ø, et al)
–, thermosensitivity of *Columba* 157:747 (Bech C, et al)
–, threshold for shivering in *Gallus* muscles 158:431 (Aulie A, Tøien Ø)
–, thyroxine as photoperiodic mimetic in Japanese quail 157:829 (Follett BK, et al), 837 (Follett BK, Nicholls TJ)
–, timing of testicular regression in *Zonotrichia* 153A:489 (Moore MC, et al)
–, tissue thermogenesis in *Somateria* ducklings 158:513 (Grav HJ, et al)
–, transferrin and iron uptake by chick myogenic cells 158:559 (Sorokin LM, Morgan EH)
–, transferrin endocytosis by chicken erythroid cells 155:201 (Lim BC, Morgan EH)
–, urea in *Lagopus* 155:71 (Mortensen A, Tindall A)
–, uric acid and urea in geese protein catabolism 157:491 (Robin J-P, et al)
–, ventilation and oxygen consumption in finches at low and high altitude 158:57 (Clemens DT)
–, vibrational sensitivity in pigeon 152A:251 (Shen J-X)
–, water balance in *Dromaius* 153:235 (Dawson TJ, et al)
–, water economy in nests 156:823 (Andersen Ø, Steen JB)
–, water relations of burried megapodiid eggs 157:413 (Seymour RS, et al)
–, yolk sac resorption in newly hatched chicken 160:645 (Esteban S, et al)
Axolotl, see *Ambystoma*

B

Bacterial symbionts in a gutless clam 152:3 (Felbeck H)
Bantam hen, see fowl

Barbatia, oxygen equilibria of intracellular hemoglobins 156:675 (Grinich NP, et al)
Bat, see *Cormura*, *Eptesicus*, *Macrotus*, *Myotis*, *Nyctalus*, *Pteronotus*, *Rhinolophus*, *Saccopteryx*
Bear, see *Ursus*
Bee, see *Apis*, *Bombus*, *Scaptotrigona*, *Xylocopa*
Beeswax, see wax
Beetle, see Coleoptera
Behavior, dealation and oviposition by virgin queen fire ants 153A:467 (Fletcher DJC, Blum MS)
–, escape, giant and non-giant systems in crayfish – 153A:3 (Reichert H, Wine JJ)
–, foraging, effects on bat distribution 156:441 (Bell GP, et al)
–, motion perception in toads 152A:241 (Burghagen H, Ewert J-P)
–, responses to vibratory stimuli in a spider 152A:347, 361 (Hergenröder R, Barth FG)
–, thermal, of bees on a feeding place 158:135 (Schmaranzer S, Stabentheiner A)
–, vibrational sensitivity in pigeon 152A:251 (Shen J-X)
Beta-adrenergic, see adrenergic
Bilirubin, excretion in skate bile 157:61 (Grossbard ML, et al)
Biliverdin, excretion in skate bile 157:61 (Grossbard ML, et al)
Bioadhesive, DOPA in silk-like cement of polychaete tubes 158:317 (Jensen RA, Morse DE)
Bioluminescence, cellular circadian clock and 80 S inhibitors in *Gonyaulax* 157:85 (Thorey I, et al)
Biomphalaria, glucose tolerance 160:41 (Liebsch M, Becker W)
–, keton body metabolism 156:563 (Meyer R, et al)
Bird, see Aves
Birgus, adaptation to a terrestrial life 160:217 (Morris S, Greenaway P)
Bivalve molluscs, podocytes and ultrafiltration 156:151 (Meyhöfer E, et al)
Blabera, phenylalanine transport in midgut 156:549 (Parenti P, et al)
Blaberus, adipokinetic/hyperglycemic hormones 160:187 (Hayes TK, Keeley LL)
–, endurance in locomotion 160:573 (Full RJ, Tullis A)
Black widow spider, see *Latrodectus*
Blackbird, see *Xanthocephalus*
Blennie, see *Zoarces*
Blood, see also hemolymph
– acid-base balance in lizards 156:853 (Blicker PE)
–, acid-base balance in trout 152:53 (Thomas S)
–, adherence of granulocytes 159:481 (Ehlers D, et al)
–, allosteric transitions in tench hemoglobin 157:145 (Weber RE, et al)
–, carbonic anhydrase activity in hypercapnic trout 157:405 (Dimberg K, Höglund LB)
– cells, red, see also erythrocytes
– –, –, oxygen transfer by – in high-altitude camelids 157:1 (Yamaguchi K, et al)
– –, –, regulation in lamprey – 156:747 (Nikinmaa M)
– –, volume regulatory mechanisms in *Glycera* 151:133 (Costa CJ, Pierce SK)
– circulation during swimming in turtles 154:167 (Butler PJ, et al)
–, energy metabolism of frog erythrocytes 155:109 (Kaloyianni-Dimitriades M, Beis I)
–, exercise and adrenergic effects on tench – 157:51 (Jensen FB)
– flow, see also circulation
– –, cardiovascular responses to toad laryngeal nerve stimulation 156:363 (Van Vliet BN, West NH)
– – in hen brood patch 155:703 (Mitgård U, et al)
– –, vasoactivity of salamander gills and pulmonary artery 155:241 (Malvin GM)
–, haematological effects of acid and aluminium exposure in trout 160:563 (Witters, HE, et al)
–, hemocyanin of ghost crab 157:501 (Johnson BA)
–, ionic concentration of *Octopus* – 156:503 (D'Aniello A, et al)
–, non-haem iron in lamprey larvae – 156:269 (Macey DJ, et al)
– oxygen affinity, beta-adrenergic control of – in trout during hypoxia 157:667 (Tetens V, Christensen NJ)
–, oxygen and carbon dioxide transport by burrowing crab – 155:733 (Taylor AC, et al)
–, oxygen binding properties of high altitude camelid – 158:469 (Jürgens KD, et al)
– oxygen transport, adrenergic involvement in trout – 158:107 (Vermette MG, Perry SF)
– – – in sparrows 155:277 (Maginniss LA)
– – – of arctic mammals 159:655 (Brix O, et al)
– – –, role of β-adrenergic responses in fish – 154:365 (Nikinmaa M, et al)
–, plasma and serum in insect immune recognition 157:759 (Brehélin M, Boemare N)
–, plasma free fatty acids in hamster during thermogenesis 155:679 (Heldmaier G, Seidl K)
–, plasma ionic composition and erythrocytes in deep sea fish 155:629 (Shelton C, et al)
– pressure and plasma renin activity in turtle 154:287 (Stephens GA, Creekmore JS)
– –, autonomic nervous control during hypoxia in cod 160:287 (Fritsche R, Nilsson S)
– –, effect of cold stress on chick embryo – 155:195 (Tazawa H, Nakagawa S)
– –, effects of eicosanoids on – in hagfish 158:621 (Wales NAM)
–, properties of chicken developing erythroid cells 155:201 (Lim BC, Morgan EH)
– respiratory properties, effects of nitrite on carp – 157:533 (Jensen FB, et al)
– respiratory status of air- exposed eel 157:635 (Hyde DA, et al)
–, thermodynamics in tench hemoglobin 157:137 (Jensen FB, Weber RE)
–, three-state MWC analysis of fish hemoglobin oxygenation 160:407 (Jensen FB, et al)
–, transferrin-receptor interactions and iron uptake by vertebrate reticulocytes 157:363 (Lim BC, et al)
– viscosity, erythrocythemia effects on toad – 155:577 (Hillman SS, et al)
– – in seals 159:153 (Wickham LL, et al)
– –, low, in cold water marine sculpins 155:455 (Graham MS, Fletcher GL)
–, vitamin E and fatty acids in seal – 159:649 (Schweigert FJ, et al)
– volume, effect on gull salt gland secretion 157:261 (Hughes MR)
– –, maintenance in snakes 155:305 (Smits AW, Lillywhite HB)
–, water concentration of seal pup – during fasting 160:537 (Castellini JM, et al)
– worm,, see *Glycera*
Blowfly, see *Calliphora*
Boa, infrared tectal thresholds 151A:461 (Cock Buning T de)
Body fluid volume and panting thresholds in dehydrated iguana 156:377 (Dupré RK, Crawford EC)
– – –, control by angiotensin in hamsters 158:703 (Rettig R, et al)
– mass, changes during natural breeding fast in penguins 156:521 (Groscolas R)
– –, effect of external factors on hamster – 156:717 (Janský L, et al)
– temperature, changes during natural breeding fast in penguins 156:521 (Groscolas R)
– –, effect on lizard locomotory energetics 155:21 (Bennett AF, John-Alder HB)
– – in nontorpid mousebirds 157:801 (Prinzinger R)
– – regulation in flying pigeons 157:111 (Hirth K-D, et al)
– weight, semimonthly rhythm in garden warblers 156:859 (Bairlein F)
Bohr effect in octopus hemocyanin 158:547 (Miller KI, Mangum CP)
Bombus, food uptake, storage and use 158:263 (Surholt B, et al)
Bombyx, alkaline phosphatase isoenzymes in midgut 159:123 (Okada N, et al)
–, arginase activity 155:653 (Aigaki T, Osana M)
–, cGMP-dependent protein kinase from eggs 155:693 (Takahashi SY)
–, egg-specific protein 158:1 (Indrasith LS, et al)
–, pheromone-triggered flip-flopping interneurons 152A:297 (Olberg RM)
–, sorbitol dehydrogenase in diapause eggs 160:277 (Yaginuma T, et al)
Book lungs, function in arachnids 159:409 (Paul R, et al), 419 (Paul R, Fincke T), 433 (Fincke T, Paul R)
Botrylloides, opsonisation of erythrocytes by agglutinin 154:509 (Coombe DR, et al)
Brachiopod, see *Laqueus*
Brachypelma, exercise and maximal aerobic capacity 155:529 (Anderson JF, Prestwich KN)
Bradycardia during dive in ducks and cormorants 154:243 (Mangalam HJ, Jones DR)
Brain, see also central nervous system
–, effects of amines on evoked potentials in bee 151A:469 (Mercer AR, Erber J)
–, electrophysiology of teleostean nucleus isthmi 152A:545 (Williams B, et al)
–, electrosensory diencephalic nuclei in an elasmobranch 153A:331 (Schweitzer J)

-, embryonic, prothoracicotropic hormone activity in hornworm – 157:279 (Dorn A, et al)
- gangliosides in vertebrates 151:215 (Rahmann H, Hilbig R)
-, glycogen phosphorylase from frog – 156:77 (Kamp G, Wegener G)
-, influence on in vitro formation of gastropod periostracum 155:177 (Kunigelis SC, Saluedin ASM)
-, pituitary function and osmotic balance in fowl 156:103 (Hall TR, et al)
-, processing of visual stimuly by salamander tectal neurons 153A:85 (Finkenstädt T, Ewert J-P)
-, prolactin binding in toad – 155:611 (Lüthy IA, et al)
-, responses of single units in bat inferior colliculus to acoustic signals 153A:67 (Bodenhamer RD, Pollak GD)
-, tectal infrared sensitive neurons in snakes 151A:461 (Cock Buning T de)
- temperature and swimming muscle in lamnid sharks 157:709 (Wolf NG, et al)
- -, effect of dehydration on fowl – 154:295 (Arad Z, et al)
- - in a hummingbird 157:583 (Burgoon DA, et al)
- temperatures in sharks 156:229 (Block BA, Carey FG)
-, visual pattern discrimination through neural interactions in salamanders 153A:99 (Finkenstädt T, Ewert J-P)
-, visual responses in fish optic tectum 152A:147 (Kawasaki M, Aoki K)
Brainstem and generation of respiratory movements in quails 155:37 (Davey NJ, Seller TJ)
-, auditory responses from ground squirrel – 159:159, 167 (Hamill NJ, et al)
Breathing pattern and growth 155:171 (Mortola JP, Noworaj A)
Brine shrimp, see *Artemia*
Brood patch, cold vasodilatation in Bantam hen – 155:703 (Mitgård U, et al)
Brown adipose tissue (BAT), role in hamster nonshivering thermogenesis 155:717 (Rafael J, et al); 156:237 (Heldmaier G, Buchberger A)
- - -, seasonal adaptation in hamster 155:521 (Rafael J, et al)
- - -, thermogenesis in house mice 157:39 (Schneider JE, et al)
- - -, thermogenic properties in bank voles and wood mice 158:157 (Klaus S, et al)
Brush border membrane, sodium uptake in trout intestinal – 159:275 (Aguenaou H, et al)
- - - vesicles (BBMV), alanine transport by lobster – 156:537 (Ahearn GA, et al)
- - - vesicles, solute transport through renal – in toadfish 157:573 (Wolff NA, et al)
- - - vesicles, taurine transport by – 155:185 (King PA, et al)
- - - vesicles, transport of phenylalanine in cockroach midgut – 156:549 (Parenti P, et al)
- - membranes, Na^+/H^+ exchanger in dogfish kidney – 159:339 (Bevan C, et al)
Bufo, cardiovascular responses to laryngeal nerve stimulation 156:363 (Van Vliet BN, West NH)
-, centrally elicited behavior and autonomic adjustments 155:381 (Cordeiro de Sousa MB, Hoffmann A)
-, contractile performance of sartorius muscle 151:127 (Renaud JM, Stevens ED)
-, effects of erythrocythemia on blood viscosity and oxygen transport 155:577 (Hillman SS, et al)
-, flow effects on cardiac vagus 155:571 (Courtice GP, McCloskey DI)
-, hemorrhage and hypernatremia effects 155:807 (Hillman SS, Withers PC)
-, hyperosmolal effects on cardiac muscle 154:325 (Hillman SS)
-, motion perception 152A:241 (Burghagen H, Ewert JP)
-, nervous control of skin permeability 154:573 (Segura ET, et al)
-, prolactin binding in brain and kidney 155:611 (Lüthy IA, et al)
-, pulmonary function and metabolism 152:125 (Withers PC, Hillmann SS)
-, reflex control of diuresis 159:91 (Petriella S, et al)
-, temperature and pH effects on muscle LDH 160:105 (Mendiola P, De Costa J)
-, water retention and plasma urine composition in burrowed – 156:735 (Katz U, Gabbay S)
Bumble bee, see *Bombus*
Bunodosoma, β-alanine metabolism 154:181 (Kasschau MR, et al)
Bunopus, temperature effects on oxygen consumption 159:1 (AL-Sadoon MK, Abdo NM)
Bushcricket, see *Caedicia*, *Tettigonia*
Busycon, energy metabolism in ventricle 153:159 (Ellington WR)
-, protein kinase phosphorylates pyruvate kinase 160:309 (Brooks SPJ, Storey KB)
-, response diversity in proboscis muscles 159:717, 727 (Huddart H, et al)
-, uncoupling in radular protractor muscle 158:501 (Huddart H, Hill RB)
Busycotypus, enzyme binding and glycolytic control of anaerobiosis 156:635 (Plaxton WC, Storey KB)
-, tissue specific isozymes of pyruvate kinase 155:291 (Plaxton WC, Storey KB)
Butterfly, see *Papilio*
Byssus, adhesive foam of mussel – 156:491 (Waite JH)

C

Ca, see calcium
Cabbage looper, see *Trichoplusia*
Caecal bulb, function and regulation of avian – 159:51 (Thomas DH, Skadhauge E)
Caedicia, physiology of ascending auditory interneurons 152A:495 (Oldfield BP, Hill KG)
-, projections of auditory fibres 151A:389 (Oldfield BP)
Calcium antagonist, effect on molluscan muscle 158:501 (Huddart H, Hill RB)
- antagonists, action on whelk proboscis muscles 159:727 (Huddart H, et al)
- binding, soluble protein from earthworm body wall muscle 158:325 (Huch R, et al)
-, distribution in estradiol treated trout 155:347 (Björnsson BT, Haux C)
-, effect on ciliary reversal in *Paramecium* 152A:385 (Hildebrand E, Dryl S)
-, effects on contraction frequency of teleost hearts 156:135 (Driedzic WR, Gesser H)
-, extracellular, effect on trout heart muscle 154:523 (Nielsen KE, Gesser H)
-, -, effect on turtle atria 154:385 (Yee Jr HF, Jackson DC)
- flux during phagocytosis in amoeba 159:287 (Prusch RD, Vedovatti PA)
- metabolism in turtle embryos 159:501 (Packard MJ, Packard GC)
-, mobilization by blackbird embryos 160:649 (Packard MJ, Packard GC)
- paradox in frog heart 160:113 (Touraki M, Beis I)
-, role in protein phosphorylation in *Neurospora* daily rhythm 159:695 (Techel D, et al)
-, transport to and deposition in fly puparial cuticle 158:413 (Krueger RA, et al)
Calcium-sensitive Na-absorption in frog colon 160:161 (Krattenmacher R, et al)
Callinectes, temperature effects on neuromuscular properties 158:689 (Blundon JA)
Calliphora, wing stroke frequency 153A:289 (Otzen H, Kuiper JW)
Calliphorin, spider hemocyanin cross-reacting with – 159:139 (Markl J, Winter S)
Calorimetry in brine shrimp embryos during long-term anoxia 160:357 (Hand SC)
Camelus, oxygen binding properties of blood 158:469 (Jürgens KD, et al)
-, oxygen transfer by red blood cells 157:1 (Yamaguchi K, et al)
Cancer, antennal gland function in acid-base balance 155:445 (Wheatly MG)
-, CO_2 excretion and carbonic anhydrase 154:371 (McMahon BR, et al)
Capillaries in avian skeletal muscles 160:583 (Snyder GK)
Capra, oxygen transfer by red blood cells 157:1 (Yamaguchi K, et al)
Carassius, aldehyde dehydrogenase and alcohol dehydrogenase in – 158:479 (Nilsson GE)
-, carbohydrate metabolism 154:477 (Thillart G van den, Smit H)
-, effects of dopamine on thermoregulation 159:83 (Wollmuth LP, et al)
-, glomerular intermittency 154:225 (Elger M, et al)
-, glycolytic control during anoxia 157:813 (Rahman MS, Storey KB)
-, temperature acclimation and muscle contractile properties 157:219 (Heap SP, et al)
-, temperature effects on intestinal transport 151:163 (Groot JA, et al)
-, transport and activity of orally administered GtH 157:753 (Suzuki Y, et al)
Carausius, antennal olfactory receptors 152A:459 (Tichy H, Loftus R)
-, neurodepressing factor in haemolymph 152A:283 (Finlayson LH, et al)
Carbohydrate metabolism, arrestment in *Artemia* embryos 156:451 (Carpenter JF, Hand SC)

Carbohydrate metabolism in goldfish 154:477 (Thillart G van den, Smit H)
– storage and ant mating flight 160:207 (Passera L, Keller L)
Carbohydrates, snail galactans 159:629 (Knels U, Bretting H)
Carbon dioxide, effect on muskrat thermoregulation and acid-base balance 156:339 (MacArthur RA)
– –, effect on oxygen binding by *Artemia* hemoglobin 156:355 (Davis BJ, Riggs AF)
– –, effects on lugworm ventilation 156:797 (Conti E, Toulmond A)
– – excretion across fish gills 158:627 (Wright PA, et al)
– – – in crabs 154:371 (McMahon BR, et al)
– – loading, effects on lung gases and breathing in lizards 158:591 (Ballam GO, Donaldson LA)
– – release in arachnid book lungs 159:419 (Paul R, Fincke T)
– –, responses of woodchuck and porcupine to – 159:641 (Boggs DF, Birchard GF)
– – sensitive receptors in lizard upper airway 157:483 (Coates EL, Ballam GO)
– – transport by crab blood 155:733 (Taylor AC, et al); 157:873 (Morris S, et al)
Carbonic anhydrase activity in crab gills and lungs 160:217 (Morris S, Greenaway P)
– – – in hypercapnic trout 157:405 (Dimberg K, Höglund LB)
– –, effect on crab CO_2 excretion 154:371 (McMahon BR, et al)
Carcinus, chloride ATPase in gills 160:223 (Siebers D, et al)
–, monoamine actions on skeletal muscle 154:503 (Huddart H, Battram JC)
–, moult-inhibiting hormone 156:617 (Webster SG, Keller R)
–, reflex motor control of muscle receptor 153A:309 (Cannone AJ, Bush BMH)
–, respiration during emersion 158:387 (Dejours P, Truchot J-P)
–, responses of ventilatory CPGs to variations in O_2 tension 159:29 (Wilkens JL, et al)
–, water and hemolymph acid-base balance 154:601 (Truchot J-P)
Cardenoids, role in diet of moth larvae 160:389 (Wink M, Schneider D)
Cardiac, see also cardio-, heart
– action potentials in marsupials 158:759 (Campbell TJ)
– activity, purinergic modulation in hypoxic flounder 159:105 (Lennard R, Huddart H)
– effects of neurohypophysial hormones in eel 160:213 (Chiu KW, Lee VC)
– energy metabolism in teleost and elasmobranch fish 154:593 (Driedzic WR, Hart T)
– function of leopard shark 160:259 (Lai NC, et al)
– ganglion, driver potentials in lobster neurons 151A:329 (Tazaki K, Cooke IM)
– –, topographical localization of function in a crab 151A:311 (Tazaki K, Cooke IM)
– modulation by humoral factors in mollusc traumatic body wall 159:211 (Krontiris-Litowitz JK, et al)
– – of IPC in ducks 159:597 (Adamson TP, et al)
– muscle, hyperosmolal effects on amphibian – 154:325 (Hillman SS)
– output in swimming harbor seal 160:473 (Ponganis PJ, et al)
Cardio-, see also cardiac, heart
Cardioactive neuropeptide in a snail 154:29 (Geraerts WPM, et al)
Cardioactive peptide, crustacean, in locust nervous system 159:5 (Stangier J, et al)
Cardiorespiratory function in horse during exercise 157:791 (Evans DL, Rose RJ)
– responses of snakes 152:59 (Lillywhite HB, et al)
– – of woodchuck and porcupine 159:641 (Boggs DF, Birchard GF)
Cardiovascular adjustment during swimming in turtles 154:167 (Butler PJ, et al)
– capacity, effects of hemorrhage and hypernatremia on amphibian – 157:807 (Hillman SS, Withers PC)
– dynamics in crocodiles 157:381 (Grigg GC, Johansen K)
– regulation by angiotensin in hamsters 158:703 (Rettig R, et al)
– responses to laryngeal nerve stimulation in toads 156:363 (Van Vliet BN, West NH)
– – to spinal cooling in chickens 155:103 (Barnas GM, et al)
– – to thermal stimulation of frog spinal cord 156:611 (Nagai M, Iriki M)
Cardisoma, peptides in sinus gland 153:191 (Stuenkel EL), 207 (Newcomb RW)
Cardium, pyruvate reductases 156:873 (Meinardus-Hager G, Gäde G)
–, regulation of glycolysis 159:195 (Meinardus-Hager G, et al)
Carp, see *Cyprinus*
Carpodacus, effects on activity rhythms 153A:413 (Fuchs JL)
–, substrate metabolism in seasonally acclimatized – 154:469 (Marsh RL, et al)
–, ventilation and oxygen consumption 158:57 (Clemens DT)
Caste-specific hormone differences in stingless bee development 160:617 (Hartfelder K, Rembold H)
Catalase, role in adaptation of toad tissues to hyperoxia 158:583 (Barja de Quiroga G, et al)
Catecholamine, see also adrenergic
– levels and thermoregulation in guinea-pig 157:855 (Roth J, et al)
– uptake in teleost swimbladder gas gland 155:479 (Ungell A-L)
Catecholamines and hypercapnia in trout 158:107 (Vermette MG, Perry SF)
–, catecholaminotropic effects in a teleost 155:285 (Epple A, Nibbio B)
–, effects on eel gill water influx 157:327 (Bennett MB, Rankin JC)
–, endogenous, release of – from cod spleen 160:401 (Ehrenström E, Ungell A-L)
– in cockroach hemolymph and cuticle 160:175 (Czapla TH, et al)
– in jellyfish tissue 159:173 (Chung JM, et al)
– in the sea lamprey 152:35 (Dashow L, Epple A)
–, interactions with surfactants in teleost gill 156:727 (Stagg RM, Shuttleworth TJ)
–, pulmonary vasculature regulation in a snake 159:677 (Donald JA, et al)
–, role in control of trout ventilation 160:441 (Kinkead R, Perry SF)
–, species differences in adrenal distribution 155:367 (Racz K, et al)
Cation fluxes in trout hepatocytes 160:93 (Bianchini L, et al)
Catostomus, acid-base and iono-regulation 154:35, 329 (Höbe H, et al); 158:67 (Höbe H, McMahon BR)
cDNA cloning in chum salmon 160:601 (Hyodo S, et al)
Cell cycles in *Euglena* 155:257 (Malinowski JR, et al)
– ion exchange in a sea anemone 156:591 (Herrer FC, et al)
– solute composition in dogfish rectal gland 155:145 (Kleinzeller A, et al)
Central nervous system, see also brain
– – –, diversity of cerebral ganglia neurons in a gastropod 153A:533 (McClellan AD)
– – –, effect of electrical stimulation on autonomic adjustments in toads 155:381 (Cordeiro de Sousa MB, Hoffmann A)
– – –, olfactory bulb potentials in carp 152A:319 (Satou M, et al)
– – –, organisation of gaze stabilizing reflexes in frog and turtle 153A:495 (Dieringer N, et al)
– – –, role in toad water economy 154:573 (Segura ET, et al)
– – –, tyrosine hydroxylase activity in crayfish – 155:603 (Laxmyr L)
Central pattern generator, responses of crab ventilatory – to changes in O_2 tension 159:29 (Wilkens JL, et al)
Cephalic gland, role in crayfish molt 152:91 (Jegla TC, et al)
– osmoreceptors, duck salt gland control by – 154:449 (Gerstberger R, et al)
Cephalopoda, see *Loligo*, *Octopus*, *Sepiola*
Cerebral ganglia neurons, effects on buccal motor patterns in gastropod 153A:533 (McClellan AD)
– ventral giant cell, pre- and postsynaptic actions on buccal muscles 159:509 (Evans CG, Dorsett DA)
Cernuella, uricolytic enzymatic system 159:115 (Lazaridou-Dimitriadou M, Kaloyianni M)
Ceruchus, hormonal control of ice nucleators 160:51 (Lei Xu, et al)
–, overwintering adaptations 156:707 (Neven LG, et al)
Channa, aerial ventilation 156:425 (Glass ML, et al)
Charr, see *Salvelinus*
Chelonia, ion transport in salt glands 159:609 (Marshall AT)
–, oxygen transport 154:275 (Wood SC, et al)
–, respiration, blood circulation and metabolism during swimming 154:167 (Butler PJ, et al)
–, secretory capacity of salt glands 157:821 (Marshall AT, Cooper PD)
Chelonus, effect of parasitizing on *Trichoplusia* metamorphosis 155:235, 583, 645 (Jones D)
Chelydra, calcium and phosphorus metabolism in embryos 159:501 (Packard MJ, Packard GC)
–, temperature and moisture effects on hatch-

ling composition 158:117 (Packard GC, et al)
- water exchange in eggs 160:317 (Kam Y-C, Ackerman RA)
Chemoreception, see also olfaction, olfactory
- AMP as chemoattractant for a marine shrimp 153A:47 (Carr WES, Thompson HW)
- effect of temperature on crayfish leg receptors 152A:395, 405 (Hatt H)
- effectiveness of cockroach sex pheromones 152A:309 (Sass H)
- excitability of insect olfactory receptors 152A:459 (Tichy H, Loftus R)
- gustatory responses to amino acids of trout palate 153A:423 (Marui T, et al)
- gustatory specificity for amino acids in carp facial taste system 153A:299 (Marui T, et al)
- in an isopod 152A:219 (Seelinger G)
- O_2-, role in crayfish oxygen consumption 155:43 (Massabuau JC, Burtin B)
- olfactory discrimination in a fly 152A:373 (Borst A)
- pheromone-triggered interneurons in moth ventral nerve cord 152A:297 (Olberg RM)
Chemoreceptors, intrapulmonary, effects of chronic acidosis on – 154:393 (Barnes GM, Burger RE)
Cherax, image quality in superposition eye 151A:367 (Bryceson KP, McIntyre P)
Chicken, see also fowl, *Gallus*, hen
- effect of acidosis on intrapulmonary chemoreceptors 154:393 (Barnas GM, Burger RE)
- lateral diffusion in egg shell membranes 158:567 (Visschedijk AHJ, et al)
- loss of pineal SNAT activity 159:583 (Rodriguez-Cabello JC, et al)
- newly-hatched, yolk sac resorption 160:645 (Esteban S, et al)
- regional gas exchange in eggs 158:229 (Seymour RS, Visschedijk AHJ)
- response of embryo to cold stress 155:195 (Tazawa H, Nakagawa S)
- responses to spinal cord cooling 155:103 (Barnas GM, et al)
- transferrin and iron uptake by muscle cells 158:559 (Sorokin LM, Morgan EH)
- transferrin endocytosis by erythroid cells 155:201 (Lim BC, Morgan EH)
Chiromantis, control of thermoregulatory evaporation 158:643 (Kaul R, Shoemaker VH)
- gas exchange and evaporative water loss 157:423 (Stinner JN, Shoemaker VH)
Chironomus, anaerobic metabolism in larvae 158:307 (Redecker B, Zebe E)
Chitin biosynthesis in brine shrimp 159:777 (Horst MH)
Chloride absorption of crab gill 159:21 (Onken H, Graszynski K)
- ATPase in crab gills 160:223 (Siebers D, et al)
- effect on alanine transport by lobster BBMV 156:537 (Ahearn GA, et al)
- fluxes in a crab 157:599 (Zanders IP, Martelo M-J)
- – in isolated plasma membranes 155:415 (Hannafin JA, Kinne R)
- regulation in freshwater amphipod 158:81 (Bayliss D, Harris RR)
- secretion and adrenergic receptors in a teleost 154:343 (May SA, et al)
- –, inhibition in fish opercular epithelium 156:183 (May SA, Degnan KJ)
- transport across tobacco hornworm integumentary epithelium 155:743 (Cooper PD, Jungreis AM)
- transport, branchial, adrenergic control in trout 154:269 (Perry SF, et al)
- uptake, inhibition by nitrite in freshwater teleosts 156:867 (Williams EM, Eddy FB)
Cholinergic mechanisms in Cl secretion in fish opercular epithelium 156:183 (May SA, Degnan KJ)
Chordotonal organ, giant interneurones in cockroach abdominal ganglion inhibited by – 153A:377 (Bernard J, et al)
Chorion, ionic movements across – in salmon eggs 159:771 (Eddy FB, et al)
Chromatic deprivation, synapse frequency in bee eye after – 151A:477 (Hertel H)
Chrysemys, acidosis and calcium effects on mechanical activity of atria 154:385 (Yee Jr HF, Jackson DC)
–, renal phosphate transport 152:117 (Laverty G)
–, ventilatory control 151:145 (Glass ML, et al)
Chuckar, see *Alectoris*
Cicadas, sound production and muscle contraction kinetics 152A:183 (Young D, Josephson RK)
Cilia, L-^{3}H glutamate binding site on protist – 158:345 (Preston RR, Usherwood PNR)
Ciliary reversal and Ca-concentration in *Paramecium* 152A:385 (Hildebrand E, Dryl S)
Circadian activity, colour changes as synchronizers 151A:359 (Nuboer JFW, et al)
- organization in a lizard 152A:265 (Underwood H)
- – in *Aplysia* 153A:133 (Lickey ME, et al)
- oscillator in *Aplysia* eye 151A:253 (Woolum JC, Strumwasser F)
- oscillators in *Euglena* 155:257 (Malinowski JR, et al)
- pacemaker activity in a cockroach 152A:231 (Page TL)
- rhythm, see rhythmicity
- –, components of split – in hamster 153A:123 (Lees JG, et al)
- system, optic-tract regeneration and internal coupling in cockroach 153A:353 (Page TL)
Circulation, see also blood flow
–, capillaries in avian skeletal muscles 160:583 (Snyder GK)
–, effects of hydraulic force generation on spider – 158:673 (Paul R, et al)
–, effects of salt and volume loading on leech – 158:553 (Hildebrandt J-P, Zerbst-Boroffka I)
- in octopus during exercise 156:683 (Houlihan DF, et al)
Citellus, auditory brainstem responses 159:159, 167 (Hamill NJ, et al)
Citharichthys, sulfide detoxification by mitochondria 160:519 (Bagarinao T, Vetter RD)
Cl, see chloride
Clam, see *Solemya*
Clethrionomys, brown adipose tissue 158:157 (Klaus S, et al)
–, thermogenesis and reproduction 156:741 (Feist DD, Feist CF)
Clitellio, volume regulation 154:125 (Ferraris JD)
Clotting of cockroach hemolymph 154:457 (Bohn H, Barwig B); 155:135 (Barwig B); 156:625 (Bohn H, Saks T); 158:527 (Ferstl S, et al)
CO_2, see carbon dioxide
Coagulogens in cockroach hemolymph 155:135 (Barwig B); 156:625 (Bohn H, Saks T); 158:527 (Ferstl S, et al)
Cockle, see *Cardium*
Cockroach, see *Blabera*, *Blaberus*, Dictyoptera, *Diploptera*, *Leucophaea*, *Periplaneta*
Cod, see *Gadus*
Coelenterata, adrenergic neurotransmission 155:251 (Carlberg M, Rosengren E)
–, cell ion exchange in *Condylactis* 156:591 (Herrera FC, et al)
–, dopamine in *Polyorchis* tissues 159:173 (Chung JM, et al)
–, β-alanine metabolism in *Bunodosoma* 154:181 (Kasschau MR, et al)
–, FMRamide contractions in *Renilla* 157:31 (Anctil M)
–, serotonin modulation of peristalsis in *Renilla* 159:491 (Anctil M)
–, smooth muscle cells of *Mnemiopsis* 154:257 (Anderson PAV)
Coelomic fluid toxicity in *Eisenia* 157:77 (Kauschke E, Mohrig W)
Coelomocytes, volume regulation in blood worm 151:133 (Costa CJ, Pierce SK)
Cold acclimation, effect on cation transport in hamster liver cells 154:159 (Horwitz BA, et al)
- adaptation, brown adipose tissue of hamster in nonshivering thermogenesis 155:717 (Rafael J, et al)
- hardiness in antarctic nematodes 160:167 (Pickup J)
- – in beetles 151:225, 233 (Horwath KL, Duman JG)
- stress in flesh flies 160:543 (Chin C-P, et al)
- tolerance in nematodes 154:73 (Wharton DA, et al)
- – in young house martins 159:379 (Steen JB, et al)
- vasodilatation in hen brood patch 155:703 (Mitgård U, et al)
Coleoptera, see also *Ceruchus*, *Dendroides*, *Dytiscus*, *Onymacris*, *Popillia*, *Psammodes*, *Speophyes*, *Tenebrio*
–, AKH/RPCH-neuropeptides from corpora cardiaca 155:589 (Gäde G)
–, locomotion and respiration in desert – 155:155 (Bartholomew GA, et al)
Collagen, mussel adhesive protein with features of – 159:517 (Waite JH, et al)
Colliculus, inferior, single unit responses in bat 153A:67 (Bodenhamer RD, Pollak GD)
Colon, Ca-sensitive Na-absorption in frog – 160:161 (Krattenmacher R, et al)
–, electrical parameters and Na concentration in fowl – 158:19 (Grubb BR, Bentley PJ)

Colon, ion transport in avian – 159:131 (Grubb BR, Bentley PJ)
–, tight junction regulation in rabbit – 160:381 (Hoffmann B, et al)
Color change, evidence for a hormone in crab – 154:207 (Herreid II CF, Mooney SM)
– –, red-pigment-concentrating hormone in crustaceans 160:373 (Gaus G, et al)
– effects, antagonistic, in bee vision 151 A:441 (Menzel R, Lieke E)
Columba, see also pigeon
–, control of cutaneous evaporation 159:97 (Marder J, Raber P)
–, crop milk proteins 154:237 (Horseman ND, Will CL)
–, cutaneous and respiratory evaporation 157:253 (Webster MD, King JR)
–, thermosensitivity 157:747 (Bech C, et al)
Compound eye, spectral sensitivity of pigment migration in moth 153 A:59 (White RH, et al)
Conchiolin shell peptides, calcium-binding, from a mollusc 157:717 (Cariolou MA, Morse DE)
Conditioning of *Drosophila* clock mutants 151 A:545 (Jackson FR, et al)
Condylactis, cell ion exchange 156:591 (Herrera FC, et al)
Conger, effects of prostacyclin on in vitro heart 160:365 (Acierno R, et al)
Contraction, anaerobic metabolism in mussel muscle during – 159:349 (Zange J, et al)
Convection in antarctic seabirds 159:313 (Chappell MA, et al)
Coot, see *Fulica*
Copepoda, see *Tigriopus*
Copper, effect on trout branchial ionoregulation 155:635 (Laurén DJ, McDonald DG)
Cormorant, see *Phalacrocorax*
Cormura, echolocation calls 151 A:515 (Barclay RMR)
Corophium, chloride regulation 158:81 (Bayliss D, Harris RR)
–, osmoregulation 156:323, 331 (Taylor PM, Harris RR); 160:85 (Harris RR, Bayliss D)
Corpora cardiaca, neuropeptides from coleopteran – 159:598 (Gäde G)
Corticosterone, action in avian colon 159:131 (Grubb BR, Bentley PJ)
Corticotropin, role in hamster thermal adaptation 160:153 (Roth J, et al)
Cortisol, effects of eicosanoids on hagfish plasma – 158:621 (Wales NAM)
Corydalus, neural control of ventilatory movements 153 A:543 (Kinnamon SC, Kammer AE)
Coturnix, brainstem regions and respiratory movements 155:37 (Davey NJ, Seller TJ)
–, opiates and body temperature 160:699 (Kavaliers M)
–, responses to heat stress 158:205 (Roberts JR, Baudinette RV)
–, thermoregulation 157:625 (Saarela S, Heldmaier G)
–, water deprivation and drinking 158:519 (Takei Y, et al)
Courtship behavior, effects of biological rhythm mutations on *Drosophila* – 151 A:545 (Jackson FR, et al)
Covalent modification in anoxic goldfish 157:813 (Rahman MS, Storey KB)
Crabs, see also *Birgus*, *Callinectes*, *Cancer*, *Carcinus*, *Cardisoma*, *Leptograpsus*, *Menippe*, *Ocypode*, *Pachygrapsus*, *Portunus*, *Uca*
–, burrowing, properties of blood 155:733 (Taylor AC, et al)
Crangon, glycogenolysis after escape swimming in muscle 159:753 (Gruschczyk B, Kamp G)
Crayfish, see *Astacus*, *Austrapotamobius*, *Pacifastacus*, *Procambarus*
Creatonotus, fate of plant-derived second metabolites in – 160:389 (Wink M, Schneider D)
Cricetidae, see also *Cricetus*, hamster, *Mesocricetus*, *Phodopus*
–, crystalline allantoin in urine 155:493 (Buffenstein R, et al)
Cricetus, acid-base state during arousal from hibernation 158:495 (Malan A, et al)
–, intestinal enzyme activities 158:143 (Galluser M, et al)
–, pH-temperature interactions on a protein and hibernation 158:487 (Malan A, Mioskowski E)
Cricket, see *Acheta*, *Gryllus*, *Teleogryllus*
Crocidura, social effect on response to cold 159:301 (Nagel A)
Crocodylus, cardiovascular shunts 157:381 (Grigg GC, Johansen K)
–, pulmonary morphometry 159:761 (Perry SF)
–, sodium and water budgets 155:501 (Taplin LE)
Crop milk proteins in pigeon 154:237 (Horseman ND, Will CL)
Crotalus, maintenance of blood volume 155:305 (Smits AW, Lillywhite HB)
Crotaphytus, thermoregulatory behavior 159:13 (Firth BT, et al)
Crustacea, adaptation to terrestrial life in *Birgus* 160:217 (Morris S, Greenaway P)
–, alanine transport by *Homarus* BBMV 156:537 (Ahearn GA, et al)
–, AMP as chemoattractant for *Palaemonetes* 153 A:47 (Carr WES, Thompson HW)
–, antennal gland function in *Cancer* acid-base balance 155:445 (Wheatly MG)
–, arrestment of carbohydrate metabolism in *Artemia* embryos 156:451 (Carpenter JF, Hand SC)
–, cardiac ganglion of *Homarus* 151 A:329 (Tazaki K, Cooke IM)
–, cardiac ganglion of *Portunus* 151 A:311 (Tazaki K, Cooke IM)
–, chemoreceptors in *Hemilepistus* 152 A:219 (Seelinger G)
–, chitin biosynthesis in *Artemia* 159:777 (Horst MH)
–, chloride absorption of *Eriocheir* gill 159:21 (Onken H, Graszynski K)
–, chloride regulation in *Corophium* 158:81 (Bayliss D, Harris RR)
–, CO_2 excretion and carbonic anhydrase in *Cancer* 154:371 (McMahon BR, et al).
–, escape behavior of *Procambarus* 153 A:3 (Reichert H, Wine JJ)
–, exocytosis of *Pacifastacus* prophenoloxidase system 156:175 (Johanssen MW, Söderhäll K)
–, facilitation in FAA accumulation in *Tigriopus* 158:99 (Goodlish EM, Burton RS)
–, gastrin/cholecystokinin-like peptides in *Penaeus* haemolymph 159:269 (Van Wormhoudt A, et al)
–, glycogenolysis after escape swimming in *Crangon* muscle 159:753 (Gruschczyk B, Kamp G)
–, haemocyanin oxygen binding in talitroidean amphipods 160:195 (Spicer JI, McMahon BR)
–, hemocyanin of *Ocypode* 157:501 (Johnson BA)
–, hormone in *Uca* color change 154:207 (Herreid II CF, Mooney SM)
–, H^+-pump in *Uca* gills 159:43 (Krippeit-Drews P, et al)
–, image quality in *Cherax* superposition eye 151 A:367 (Bryceson KP, McIntyre P)
–, inheritance of solar direction finding in *Talitrus* 151 A:435 (Pardi L, Scapini F)
–, interaction of *Procambarus* motoneurons 152 A:335 (Nagayama T, et al)
–, intracellular pH regulation in *Astacus* neurons 157:435 (Gaillard S, Rodeau JL)
–, lactate and lactate dehydrogenase in *Palaemon* muscle 154:85 (Thébault MT)
–, local interneurons in *Procambarus* ganglion 151 A:261 (Reichert H, et al)
–, long term anoxia in *Artemia* embryos 160:357 (Hand SC)
–, monoamine actions on *Carcinus* skeletal muscle 154:503 (Huddart H, Battram JC)
–, motor control of crab muscle receptor 153 A:309 (Cannone AJ, Bush BMH)
–, moult-inhibiting hormone in *Carcinus* 156:617 (Webster SG, Keller R)
–, muscle fiber properties in *Eriphia* 152 A:411 (Rathmayer W, Erxleben C)
–, octopamine effects during hypoosmotic stress in *Limulus* 156:481 (Edwards SC, Pierce SK)
–, osmoregulation in *Corophium* 155:323 (Taylor PM, Harris RR); 156:331 (Taylor PM, Harris RR); 160:85 (Harris RR, Bayliss D)
–, osmotic response of *Lepeophtheirus* 155:357 (Hahnenkamp L, Fyhn HJ)
–, oxygen binding by *Artemia* hemoglobin 156:355 (Davis BJ, Riggs AF)
–, peptides in *Cardisoma* sinus gland 153:191 (Stuenkel EL), 207 (Newcomb RW)
–, pericardial neurohormone effects on *Panulirus* heart 158:403 (Kuramoto T, Ebara A)
–, physiology of *Astacus* in acid water 160:483 (Jensen FB, Malte H)
–, presynaptic inhibition of *Procambarus* afferents 153 A:443 (Fricke RA, Kennedy D)
–, properties of burrowing crab blood 155:733 (Taylor AC, et al)
–, purine bases and oxygen affinity of *Austropotamobius* haemocyanin 156:431 (Morris S, et al)
–, pyloric pattern generator in *Jasus* 153 A:1 (Rezer E, Moulins M)
–, quaternary structure of hemocyanins 158:271 (Stöcker W, et al)
–, red-pigment-concentrating hormone from 6 species 160:373 (Gaus G, et al)
–, regulation of oxygen consumption in *Astacus* 155:43 (Massabuau JC, Burtin B)

–, respiration of emersed *Carcinus* 158:387 (Dejours P, Truchot J-P)
–, respiratory properties of *Hulthisana* haemocyanin 157:873 (Morris S, et al)
–, retinula cell polarisation sensitivity 153A:435 (Stowe S)
–, rhabdom breakdown in *Leptograpsus* eye 153A:365 (Stowe S)
–, sodium and chloride fluxes in *Goniopsis* 157:599 (Zanders IP, Martelo M-J)
–, temperature and neuromuscular transmission in *Pachygrapsus* 153A:455 (Stephens PJ, Atwood HL)
–, temperature dependence of crayfish chemoreception 152A:395, 405 (Hatt H)
–, temperature effects on neuromuscular properties in crabs 158:689 (Blundon JA)
–, tonic force maintenance in *Laqueus* smooth muscle 157:651 (Wilkens JL)
–, transepithelial voltage of *Uca* gills 157:345 (Drews G, Graszynski K)
–, tyrosine hydroxylase activity in *Pacifastacus* CNS 155:603 (Laxmyr L)
–, urine production in dehydrated *Austropotamobius* 156:529 (Tyler-Jones R, Taylor EW)
–, ventilatory CO_2 drive in *Astacus* 154:65 (Massabuau J-C, et al)
–, ventilatory CO_2 reflex in *Astacus* 156:115 (Massabuau JC, Burtin B)
–, ventilatory CPG responses to changes in O_2 tension in *Carcinus* 159:29 (Wilkens JL, et al)
–, water and hemolymph acid-base balance in *Carcinus* 154:601 (Truchot J-P)
–, water relations in terrestrial idopods 151:155 (Quinlan MC, Hadley NF)
–, Y-organ and cephalic gland in *Orconectes* molt 152:91 (Jegla TC, et al)
Crustacean cardioactive peptide (CCAP) in locust nervous system 159:5 (Stangier J, et al)
Cryoprotectant synthesis, carbon balance and energetics of insect – 160:77 (Storey JM, Storey KB)
– – in freeze-tolerant arctic caterpillars 158:661 (Kukal O, et al)
– – in moth larvae 159:461 (Churchill TA, Storey KB)
– –, regulation in freeze tolerant frogs 157:373 (Storey KB)
– –, triggering in frogs 156:191 (Storey JM, Storey KB)
Ctenophore, see *Mnemiopsis*
Culex, anaerobic metabolism in larvae 158:307 (Redecker B, Zebe E)
Cupiennius, book lung function 159:419 (Paul R, Fincke T), 433 (Fincke T, Paul R)
–, heterogeneity of leg muscle 157:285 (Maier L, et al)
–, vibratory stimuli and behavior 152A:347, 361 (Hergenröder R, Barth FG)
Cutaneous evaporation in pigeon 157:253 (Webster MD, King JR)
Cuticle, catecholamines in cockroach – 160:175 (Czapla TH, et al)
–, puparial, calcium transport and deposition in fly – 158:413 (Krueger RA, et al)
–, water permeability of spider – 159:243 (Hadley NF, Quinlan MC)
Cuticular water barrier of cockroach 159:739 (Machin J, Lampert GJ)
Cyclostomata, see also lamprey
–, catecholamines of *Petromyzon* 152:35 (Dashow L, Epple A)
–, electroreceptors in lampreys 152A:209 (Bodznik D, Preston DG)
Cyprinids, temperature and size effects on oxygen consumption 156:791 (Wieser W, Forstner H)
Cyprinus, allosteric effectors and hemoglobin oxygen affinity 159:255 (Wurm Th, Albers C)
–, ascorbate absorption and metabolism 160:549 (Dabrowski K)
–, effects of nitrite on homeostasis 157:533 (Jensen FB, et al)
–, gustatory specificity 153A:299 (Marui T, et al)
–, myofibrillar proteins 160:23 (Crockford T, Johnston IA)
–, myosin and temperature acclimation 160:233 (Hwang GC, et al)
–, olfactory bulb potentials 152A:319 (Satou M, et al)
–, regulation of intestinal glucose absorption 157:677 (Buddington RK)
Cyrtodiopsis, visual performance 151A:407 (Burkhardt D, de la Motte I)
Cytotoxic activity in annelid coelomic fluid 157:77 (Kauschke E, Mohrig W)

D

Dace, see *Tribolodon*
Dasyurids, seasonal torpor in – 157:335 (Geiser F, Baudinette RV)
Dealation, effect of pheromone disinhibition on – in queen fire ants 153A:467 (Fletcher DJC, Blum MS)
Deer mice, see also *Peromyscus*
– –, altitudinal and seasonal effects on metabolism 159:453 (Hayes JP)
Defense secretion, 2-ketones in whip scorpion – 157:883 (Haupt J, et al)
Dehydration, contact – in terrestrial slugs 156:285 (Uglem GL, et al)
–, control of excretory water loss during – in sparrows 158:353 (Goldstein DL, Braun EJ)
–, effect on body-to-brain temperature difference in fowl 154:295 (Arad Z, et al)
–, effect on osmoregulation of heat exposed fowl 155:227 (Arad Z, et al)
–, effects on amphibian cardiac muscle 154:325 (Hillman SS)
–, effects on metabolism in dikdik antelope 152:23 (Kamau JMZ, Maloiy GMO)
–, effects on suckling and fasting seal pups 160:537 (Castellini JM, et al)
–, panting during – in desert iguana 156:377 (Dupré RK, Crawford EC)
–, plasma hormones in fowl during – 156:383 (Árnason SS, et al)
–, response to – in three frog species 154:579 (Beuchat CA, et al)
Dehydrogenases, function in mollusc anaerobic metabolism 156:873 (Meinardus-Hager G, Gäde G)
–, pressure adaptations in congeneric fishes 154:443 (Siebenaller JF)
Delichon, poikilothermy in young 159:379 (Steen JB, et al)
Dendroides, cold hardiness 151:225, 233 (Horwath KL, Duman JG)
Depth, see hydrostatic pressure
Desaturase activity in thermally-acclimating trout membranes 156:35 (Hagar AF, Hazel JR)
Desert gerbils, body water relations 158:127 (Goyal SP, et al)
– –, water conservation in – 160:413 (Sasidharan TO, et al)
– rodents, crystalline allantoin in urine 155:493 (Buffenstein R, et al)
– –, excretion capacity in hydrated – 157:237 (Baddouri Kh et al.)
– –, physiological effects of high fibre diets 155:211 (Buffenstein R)
Development, see also ontogeny
–, calcium-binding peptides from mollusc shell during – 157:717 (Cariolou MA, Morse DE)
–, effects of anoxia on – of flesh fly pupae 160:683 (Kukal O, et al)
–, temperature effects on alligator embryos 159:183 (Deeming DC, Ferguson MWJ)
Developmental changes in locust epidermis 154:549 (Bouthier A, Lhonoré J)
Dexamethasone, action in avian colon 159:131 (Grubb BR, Bentley PJ)
Diapause, effects of anoxia on flesh fly pupae in – 160:683 (Kukal O, et al)
–, NAD-sorbitol dehydrogenase in silkworm eggs during – 160:277 (Yaginuma T, et al)
–, pupal, photoperiodic induction in fleshfly 154:91 (Gnagey AL, Denlinger DL)
Diatrea, lipophorin from diapausing larvae 156:783 (Dillwith JW, et al)
Dictyoptera, catecholamines in – 160:175 (Czapla TH, et al)
Diencephalon, two electroreceptive nuclei in thornback ray – 153A:331 (Schweitzer J)
Diet, effects on hamster intestinal enzymes 158:143 (Galluser M, et al)
–, high fibre, physiological effects on desert rodents 155:211 (Buffenstein R)
–, influence on regulation of glucose absorption in fish intestine 157:677 (Buddington RK)
Dietary sodium and GFR autoregulation in fowl 160:7 (Vena VE, et al)
Diffusion barrier, mucus in eel oesophagus as – 157:187 (Simonneaux V, et al)
–, lateral, in chicken eggshell membranes 158:567 (Visschedijk AHJ, et al)
– lungs in tarantula 157:209 (Paul R, et al)
Digestion in herbivorous lizards and mammals 156:599 (Karasov WH, et al)
– in the koala 152:43 (Cork SJ, Warner ACI),131 (Cork SJ, Hume ID); 153:181 (Cork SJ, et al)
–, motility of llama fore-stomach 154:529 (Heller R, et al)
– of eucalypt foliage in marsupials 157:67 (Foley WJ, Hume ID), 355 (Foley WJ)
Dinoflagellate, see *Gonyaulax*
Diphenols in cockroaches 160:175 (Czapla TH, et al)

Diploptera, octopaminergic regulation of JH biosynthesis 160:241 (Thompson CS, et al)
Dipsosaurus, acid-base balance 156:853 (Bickler PE)
–, glycogen synthesis from lactate in muscle 156:277 (Gleeson TT)
–, lactate metabolism in muscle fibers 160:331 (Gleeson TT, Dalessio PM)
–, panting during dehydration 156:377 (Dupré RK, Crawford EC)
–, seasonal variations in energy metabolism and thyroid hormones 154:409 (John-Alder HB)
–, temperature effects on acid-base adjustments 154:97 (Bickler PE)
–, thermal dependence of muscle contraction 155:541 (Marsh RL, Bennett AF)
Diptera, see *Aedes*, Asilidae, *Calliphora*, *Chironomus*, *Culex*, *Cyrtodiopsis*, *Drosophila*, *Musca*, *Pantophthalmus*, *Sarcophaga*, Sarcophagidae
Discoglossus, enzymatic adaptation to hyperoxia and oxidative stress 158:583 (Barja de Quiroga G, et al)
Distribution, physiological and behavioral factors in bat – 156:441 (Bell GP, et al)
Diuresis, hormonal control of beetle Malpighian tubules 156:407 (Nicolson SW, Hanrahan SA)
–, post-bloodmeal, in the mosquito 153:257 (Williams JC, et al)
Diuretic hormone in insect larval nervous system 159:359 (Chung J-S, Keeley LL)
Diuretics, turtle renal responses to – 155:387 (Stephens GA, Robertson FM)
Diving, aerobic limits of Wedell seals 151:171 (Kooyman GL, et al)
–, blood viscosity in seals as adaptation to – 159:153 (Wickham LL, et al)
–, bradycardia in ducks and cormorants during – 154:243 (Mangalam HJ, Jones DR)
–, effects of heart rates and gas exchange in manatees 156:415 (Gallivan GJ, et al)
–, effects on crocodile cardiovascular dynamics 157:381 (Grigg GC, Johansen K)
–, effects on seal metabolism 160:627 (Davis, RW, et al), 637 (Williams TM, et al)
–, seasonal changes of aerobic limits in muskrat during – 160:593 (MacArthur RA)
Djungarian hamster, see also hamster, *Phodopus*
– –, role of BA in NST 156:237 (Heldmaier G, Buchberger A)
DNA hybridization in vertebrates 160:469 (Lyngstadaas SR, et al)
Dobsonfly, see *Corydalus*
Dog, antiduretic hormone and osmoregulation 151:241 (Gray DA, Simon E)
Dogfish, see *Scyliorhinus*, *Squalus*
Dolichovespula, thermoregulation and foraging 154:175 (Heinrich B)
DOPA decarboxylase, role in hornworm melanization 155:659 (Hiruma K, et al)
– in bioadhesive of polychaete tubes 158:317 (Jensen RA, Morse DE)
Dopamine, effect on cAMP in *Aplysia* gill 156:57 (Weiss S, et al)
–, effects on goldfish thermoregulation 159:83 (Wollmuth LP, et al)
– in jellyfish tissues 159:173 (Chung JM, et al)
Dormouse, see *Glis*
Draggon, see *Amphibolorus*
Drinking and water deprivation in quail 158:519 (Takei Y, et al)
Driver potentials in crustacean cardiac ganglion 151A:311, 329 (Tazaki K, Cooke IM)
Dromaius, water balance during dehydration 153:235 (Dawson TJ, et al)
Dromedary camel, see *Camelus*
Drosophila, amylases from – 159:237 (Yardley DG)
–, computation of olfactory signals 152A:373 (Borst A)
–, conditioning of clock mutants 151A:545 (Jackson FR, et al)
–, mutant sensitive to developmental temperature 151A:483 (Minke B)
–, neural stimulation of ecdysteroid synthesis 157:543 (Henrich VC, et al)
–, ornithine decarboxylase and vitellogenesis 160:145 (Birnbaum MJ, Gilbert LI)
–, ring gland activity 159:383 (Richard DS, et al)
–, stress-like reactions 157:519 (Rauschenbach IYu, et al)
Duck, see also *Anas*, *Somateria*
–, antidiuretic hormone and osmoregulation 151:241 (Gray DA, Simon E)
–, cardiac modulation of intrapulmonary chemoreceptor discharge 159:597 (Adamson TP, et al)
–, osmoregulatory hormones during electrolyte imbalance 158:9 (Erbe K-H, et al)
Ducks, salt intake and arterial hypotension 160:127 (Brummermann M, Simon E)
Dytiscus, Na and water balance 158:91 (Frisbie MP, Dunson WA)

E

Earthworm, see *Eisenia*, *Lumbricus*
Ecdysone, accumulation in tick eggs 157:689 (Connat J-L, et al)
Ecdysteroid metabolism in ticks 157:689 (Connat J-L, et al)
–, neural stimulation of – synthesis in a fly 157:543 (Henrich VC, et al)
– titer, caste-specific, in stingless bee 160:617 (Hartfelder K, Rembold H)
Ecdysteroids from a pycnogonid 156:759 (Bückmann D, et al)
Echinodermata, sodium free amino acid transport in *Strongylocentrotus* 156:121 (Davis JP, et al)
Echolocation calls of emballonurid bats 151A:515 (Barclay RMR)
–, effect of clutter interference 152A:447 (McCarty JK, Jen PH-S)
–, horizontal angle discrimination by a bat 153A:321 (Simmons JA, et al)
– in bats 152A:421 (Vogler B, Neuweiler G)
–, oscillating target detection by a bat 153A:385 (Schnitzler H-U, Flieger E)
–, target discrimination by flying bats 152A:275 (Habersetzer J, Vogler B)
Editorial 157:701 (Linzen B)
Eel, see *Anguilla*, *Conger*
Egg cooling, thermoregulatory responses of incubating hens to – 156:303 (Tøien Ø, et al)
– laying, induction by peptides of atrial gland in *Aplysia* 156:43 (Nagle GT, et al)
– –, temperature dependence in *Aplysia* 156:21 (Pinsker HM, Parsons DW)
– specific protein in silkworm 158:1 (Indrasith LS, et al)
– temperature in ostrich nests 157:845 (Swan D, Rahn H)
Eggs, effect of incubation media on water exchange of turtle – 160:317 (Kam Y-C, Akkerman RA)
–, gas exchange in montane and lowland coot – 159:389 (Carey C, et al)
–, gas exchange through jelly capsule of frog – 157:477 (Seymour RS, Bradford DF)
–, ionic movements across chorion in salmon – 159:771 (Eddy FB, et al)
–, ionic regulation by salmon – 159:249 (Shephard KL, McWilliams PG)
–, salmonid, gene transfer to – 158:751 (Rokkones E, et al)
–, water relations of – in mound building birds 157:413 (Seymour RS, et al)
Eggshell, conductance change effects on gas exchange in chicken – 158:229 (Seymour RS, Visschedijk AHJ)
– membranes, lateral diffusion in chicken – 158:567 (Visschedijk AHJ, et al)
Eicosanoids, effects on hagfish plasma and urine 158:621 (Wales NAM)
Eider, see *Somateria*
Eisenia, cytotoxic activity in coelomic fluid 157:77 (Kauschke E, Mohrig W)
Elaphe, cardiorespiratory responses 152:29 (Lillywhite HB, et al)
–, maintenance of blood volume 155:305 (Smits AW, Lillywhite HB)
–, pulmonary vascular innervation 159:677 (Donald JA, et al)
Electric fish, see *Gnathonemus*, *Pollimyrus*, *Sternopygus*
Electric organ discharge (EOD), effect of steroids on – 153A:29 (Meyer JH)
Electrolyte balance, effects of eicosanoids on – in hagfish 158:621 (Wales NAM)
– imbalance and osmoregulatory hormones in ducks 158:9 (Erbe K-H, et al)
– regulation, effects of nitrite on carp – 157:533 (Jensen FB, et al)
– regulation of crayfish in acid water 160:483 (Jensen FB, Malte H)
– transport, effects of vasopressin on – in lizard intestine 159:745 (Lorenzo A, et al)
– – in avian caecum 159:51 (Thomas DH, Skadhauge E)
Electrolytes in dogfish rectal gland 155:145 (Kleinzeller A, et al)
Electroreception, in lampreys 152A:209 (Bodznik D, Preston DG)
–, plasticity of receptor tuning in *Sternopygus* 153A:477 (Zakon HH, Meyer JH)
–, sensory gating by corollary discharge in fish 151A:401 (Meyer JH, Bell CC)
–, two electroreceptive nuclei in elasmobranch diencephalon 153A:331 (Schweitzer J)
Elephant seal, see *Mirounga*
Eleutherodactylus, dehydration and thermal stress 154:579 (Beuchat CA, et al)
–, intensity discrimination and call timing 153A:403 (Zelick RD, Narins PM)
Embryonic nutrition, growth and energetics

in a blennie 155:437 (Korsgaard B, Østergaard Andersen F)
- thermoresistance of fish inbred strains 160:621 (Kubota Y, Shima A)
Endocrine effects in pseudoparasitized cabbage looper larvae 155:235, 583, 645 (Jones D)
Endocytosis by chick muscle cells 158:559 (Sorokin LM, Morgan EH)
Endotherms, Arrhenius parameters and thermoregulation in – 155:711 (Geiser F, McMurchie EJ)
Endothermy, mammalian and reptilian mitochondria and evolution of – 156:3 (Else PL, Holbert AJ)
- of a giant tropical fly 156:461 (Bartholomew GA, Lighton JRB)
Endurance in insect locomotion 160:573 (Full RJ, Tullis A)
Energetic cost of moult in penguins 155:515 (Brown CR)
- – of substrate communication in a beetle 157:11 (Lighton JRB)
Energetics, effects on bat distribution 156:441 (Bell GP, et al)
-, foraging profits and honeybee thoracic temperature 160:325 (Waddington KD)
- in blennie embryo 155:437 (Korsgaard B, Østergaard Andersen F)
-, locomotory, in a lizard 155:21 (Bennett AF, John-Alder HB)
- –, of the Gila Monster 151:119 (John-Alder HB, et al)
- of honeybee flight 158:719 (Feller P, Nachtigall W), 729 (Nachtigall W, et al), 739 (Rothe U, Nachtigall W)
- of insect locomotion 160:573 (Full RJ, Tullis A)
- of penguin and duck locomotion 155:373 (Baudinette RV, Gill P)
- of treefrog vocalization 155:163 (Taigen TL, Wells KD)
Energy balance during torpor and hydropenia in gerbils 154:535 (Buffenstein R)
- –, effect of high fibre diet on rodent – 155:211 (Buffenstein R)
- –, effect of wind on deer mice – 154:619 (Chappell MA, Holsclaw III DS)
- expenditure for nocturnal survival in birds 156:655 (Reinertsen RE, Haftorn S)
- – in three wallaby species 158:237 (White RG, et al)
- –, role of habitat in hedgehogs 155:117 (Dmi'el R, Schwarz M)
- metabolism, glycogen storage and ant mating flight 160:207 (Passera L, Keller L)
- – in nontorpid mousebirds 157:801 (Prinzinger R)
- – in robber flies 155:561 (Morgan KR, et al)
- – of a giant tropical fly 156:461 (Bartholomew GA, Lighton JRB)
- – of frog erythrocytes 155:109 (Kaloyianni-Dimitriades M, Beis I)
- – of maximally active spiders 158:437, 449 (Prestwich KN)
- – of swimming trout 156:511 (Van den Thillart G)
- – of trout heart muscle under anoxia and different $[Ca^{2+}]_0$ 154:523 (Nielsen KE, Gesser H)
- –, ontogeny in penguin – 155:615 (Taylor JRD)
- –, role of 6-phosphofructokinase in locust flight muscle 157:315 (Wegener G, et al)
- –, seasonal variations in lizard – 154:409 (John-Alder HB)
- production in young trout 155:485 (Wieser W, et al)
- requirements of penguin chicks 160:61 (Culik B, et al)
- reserves, mobilisation and restoration during cod starvation and refeeding 156:469 (Black D, Love RM)
- stores, effect on ground squirrel reproductive function 154:421 (Barnes BM)
Enneacanthus, sodium balance in acidic waters 157:555 (Gonzalez RJ, Dunson WA)
Environmental factors, stress-like reactions to – in flies 157:519 (Rauschenbach IYu, et al)
Enzyme activities in hornworm midgut 157:643 (Chamberlin ME)
- activity in fish heart after acute temperature transition 160:511 (Sephton D, et al)
- binding, glycolytic, in whelk anaerobiosis 156:635 (Plaxton WC, Storey KB)
–, glycolytic, binding during anaerobiosis in mollusc foot muscle 158:771 (Lazou A, et al)
Enzymes, 6-phosphofructokinase in locust flight muscle 157:315 (Wegener G, et al)
–, ADP-ribosyltransferase in trout and man 157:567 (Burtscher HJ, et al)
–, aldehyde dehydrogenase and alcohol dehydrogenase activities in carp 158:479 (Nilsson GE)
–, alkaline phosphatases in silkworm midgut 159:123 (Okada N, et al)
–, AMP deaminase in trout gill 154:55 (Raffin J-P)
–, amylase and lipase activity in heat exposed hens 156:297 (Osman AM)
–, amylases of fish, rat and fly 159:237 (Yardley DG)
–, antioxidant, in ageing frog liver 160:655 (López-Torres M, et al)
–, arginase activity in silkworm 155:653 (Aigaki T, Osanai M)
–, carbonic anhydrase activity in crabs 160:217 (Morris S, Greenaway P)
–, carbonic anhydrase in hypercapnic trout 157:405 (Dimberg K, Höglund LB)
–, catalase and glutathione peroxidases in toad during acclimation to hyperoxia 158:583 (Barja de Quiroga G, et al)
–, cGMP-dependent protein kinase from silkworm eggs 155:693 (Takahashi SY)
–, chloride ATPase in crab gills 160:223 (Siebers D, et al)
–, desaturase activity in thermally-acclimating trout membranes 156:35 (Hagar AF, Hazel JR)
–, dopa decarboxylase and phenoloxydase in hornworm melanization 155:659 (Hiruma K, et al)
–, gamma-glutamyl transpeptidase in salmon intestinal amino acid transport 157:161 (Bell JG, et al)
–, glycolytic control in anoxic goldfish 157:813 (Rahman MS, Storey KB)
–, inhibition and disposition of trout intestinal alkaline phosphatase 157:461 (Gasser KW, Kirschner LB)
–, intestinal, activities in a hibernator 158:143 (Galluser M, et al)
–, lysophosphatidylcholine acetyltransferase in trout liver 158:363 (Livermore RC, Hazel JR)
–, mitochondrial arginine kinase from horseshoe crab heart 160:449, 459 (Doumen C, Ellington WR)
–, N-acetyl-D-glucosamine-1-phosphate transferase in brine shrimps 159:777 (Horst MH)
–, NAD-sorbitol dehydrogenase in silkworm diapause eggs 160:277 (Yaginuma T, et al)
- of snail uricolytic pathway 159:115 (Lazaridou-Dimitriadou M, Kaloyianni M)
–, oxygen detoxifying, in thiobiotic and oxybiotic meiofauna 158:335 (Morrill AC, et al)
–, phospholipase C in insect antennae 160:99 (Boeckhoff I, et al)
–, pressure adaptation of teleost gill Na^+/K^+-ATPase 160:431 (Gibbs A, Somero GN)
–, pressure inactivation of lactate dehydrogenases in deep living fish 155:647 (Hennessey Jr JP, Siebenaller JF)
–, protein kinase phosphorylates pyruvate kinase in whelk 160:309 (Brook SPJ, Storey KB)
–, purification of trout phospholipase A_2 155:461 (Neas NP, Hazel JR)
–, pyruvate kinase during anaerobiosis in limpet organs 160:529 (Gaitanaki C, et al)
–, pyruvate kinase from cockroach tissues 155:339 (Storey KB)
–, pyruvate kinase L from frogs 156:691 (Fournier P, Guderley H)
–, pyruvate kinase, phosphofructokinase and glycogen phosphorylase in anoxic worms 160:201 (Michaelidis B, et al)
–, pyruvate kinase properties in whelk tissues 155:291 (Plaxton WC, Storey KB)
–, pyruvate reductases of jumping cockle 156:873 (Meinardus-Hager G, Gäde G)
–, respiratory, of homeothermic and heterothermic endotherms 155:125 (Geiser F, McMurchie EJ)
–, –, of mitochondrial membranes in endotherms 155:711 (Geiser F, McMurchie EJ)
–, response of alkaline phosphatase to osmoregulatory changes in trout 157:469 (Gasser KW, Kirschner LB)
–, role in trout lipid transport 156:497 (Black D, Skinner R)
–, tissue-specific isoenzymes of lactate dehydrogenase in *Limulus* 155:723 (Carlsson K-H, Gäde G)
–, trehalase in beetle accessory glands and spermatophores 157:765 (Yaginuma T, Happ GM)
–, trehalases from cockroach 155:553 (Ogiso M, et al)
EOD, see electric organ discharge
Ephestia, temperature and oxygen effects on eyes 158:421 (Weyrauther E)
Epiblema, regulation of glycerol biosynthesis 159:461 (Churchill TA, Storey KB)
Epidermis, developmental changes in locust – 154:549 (Bouthier A, Lhonoré J)
Epithelial mucus of frog 155:89, 97 (Stith BJ)

Eptesicus, horizontal angle discrimination 153A:321 (Simmons JA, et al)
–, pectoralis muscle during hibernation 152:97, 137 (Yacoe ME)
–, target detection 152A:447 (McCarty JK, Jen PH-S)
Eremias, physiology and activity 154:113 (Bennett AF, et al)
Erinaceus, body temperature cycles 160:299 (Fowler PA, Racey PA)
–, hibernation patterns 155:117 (Dmi'el R, Schwarz M)
–, hypothalamo-pituitary-adrenal axis in thermoregulation 155:219 (Werner R, Vens-Cappell F)
Eriocheir, chloride absorption of gill 159:21 (Onken H, Graszynski K)
Eriphia, neuromuscular transmission in muscle fibers 152A:411 (Rathmayer W, Erxleben C)
Erythrocytes, energy metabolism of frog – 155:109 (Kaloyianni-Dimitriades M, Beis I)
– in deep sea fish 155:629 (Shelton C, et al)
Erythrocythemia, effects on toad blood viscosity and oxygen transport 155:577 (Hillman SS, et al)
Erythroid cells, developing, properties of chicken – 155:201 (Lim BC, Morgan EH)
Escape behavior, giant and non-giant systems in crayfish – 153A:3 (Reichert H, Wine JJ)
Esox, exercise metabolism 156:67 (Schwalme K, Mackay WC)
Estradiol, effect on ion distribution in trout 155:347 (Björnsson BT, Haux C)
Ethanol production in crucian carp 258:479 (Nilsson GE)
Eucalypt foliage, digestion and metabolism by marsupials 157:67 (Foley WJ, Hume ID); 157:355 (Foley WJ)
Eucalyptus, digestion by the koala 152:43 (Cork SJ, Warner ACI), 131 (Cork SJ, Hume ID); 153:181 (Cork SJ, et al)
Eudorylaimus, strategies of cold-hardiness 160:167 (Pickup J)
Eudyptes, energetic cost of moult 155:515 (Brown CR)
Eudyptula, locomotory energetics 155:373 (Baudinette RV, Gill P)
–, sleep and metabolic rate 154:487 (Stahel CD, et al)
Eugerres, electrophysiology of nucleus isthmi 152A:545 (Williams B, et al)
Euglena, circadian oscillators, cell cycles and singularities 155:257 (Malinowski JR, et al)
Eurosta, cryoprotectant synthesis and anoxia 160:77 (Storey JM, Storey KB)
–, metabolism and freezing in larvae 155:333 (Storey JM, Storey KB)
Eurypelma, evidence for diffusion lungs 157:209 (Paul R, et al)
–, function of book lung 159:409 (Paul R, et al), 419 (Paul R, Fincke T), 433 (Fincke T, Paul R)
–, heart and circulatory functions 158:673 (Paul R, et al)
–, hemolymph composition 152:73 (Schartau W, Leidescher T)
–, monoclonal antibodies to hemocyanin 159:139 (Markl J, Winter S)
Eurythermality of fish myofibrils 153:167 (Sidell BD, et al)
Euthynnus, skinned muscle fibres 155:63 (Johnstone IA, Brill R)
Evaporation, cutaneous and respiratory, in pigeon 157:253 (Webser MD, King JR)
–, cutaneous, beta-adrenergic control in pigeon 159:97 (Marder J, Raber P)
–, thermoregulatory, in waterproof treefrog 158:643 (Kaul R, Shoemaker VH)
Evolution, molecular, of salmon neurohypophysial hormone precursors 160:601 (Hyodo S, et al)
– of endothermy 156:3 (Else PL, Holbert AJ)
– of vertebrate amelogen in genes 160:469 (Lyngstadaas SR, et al)
Excretion across water boundary layer in fish gills 158:627 (Wright PA, et al)
–, CO_2 – and carbonic anhydrase in crabs 154:371 (McMahon BR, et al)
–, nitrogen – in starved fish 156:701 (Pusey BJ)
– of bile pigments in skates 157:61 (Grossbard ML, et al)
–, renal and extrarenal, of salt and water in gulls 158:651 (Gray DA, Erasmus T)
–, renal capacity in hydrated desert rodents 157:237 (Baddouri KH, et al)
–, temperature effects on acid and base – in lizards 154:97 (Bickler PE)
Excretory water loss, control of – in dehydrated sparrows 158:353 (Goldstein DL, Braun EJ)
Exercise at and above maximal aerobic capacity in spider 155:529 (Anderson JF, Prestwich KN)
–, dynamics of equine cardiorespiratory function during – 157:791 (Evans DL, Rose RJ)
–, effect on sea raven acid-base status 156:583 (Milligan CL, Farrell TP)
– metabolism in pike 156:67 (Schwalme K, Mackay WC)
– stress, effects on tench blood properties 157:51 (Jensen FB)
–, ventilation and circulation in octopus during – 156:683 (Houlihan DF, et al)
Exocytosis of crayfish prophenol-oxidase system 156:175 (Johanssen MW, Söderhäll K)
External factors, effect on testicular activity in hamsters 156:717 (Janský L, et al)
Eye, accommodation, corneal curvature and refractive state in owls 151A:277 (Murphy CJ, Howland HC)
–, circadian period in *Aplysia* – 151A:253 (Woolum JC, Strumwasser F)
–, compound, structure of ommatidium in dragonfly ventral – 151A:285 (Armett-Kibel C, Meinertzhagen IA)
–, dawn breakdown of crab rhabdoms 153A:365 (Stowe S)
–, structure and optics of snail – 152A:435 (Hamilton PV, et al)
–, superposition, image quality in crayfish – 151A:367 (Bryceson KP, McIntyre P)
– temperatures in sharks 156:229 (Block BA, Carey FG)
Eyes, temperature and oxygen effects on mealmoth – 158:421 (Weyrauther E)

F

Fasting, see also starvation
–, body temperature and plasma fuels in penguins during – 156:521 (Groscolas R)
–, effects on fatty acid metabolism in seal pups 157:445 (Castellini MA, et al)
–, plasma hormones and metabolites in penguin chicks during – 158:395 (Le Ninan F, et al)
–, protein catabolism in geese during – 157:491 (Robin J-P, et al)
–, short-term, effects on metabolism and nocturnal hypothermia in a bird 154:23 (Reinertsen RE, Haftorn S)
–, water concentration in seal pups during – 160:537 (Castellini JM, et al)
Fat, see also brown adipose tissue
– body, site of vitellogenin synthesis in a tick 155:671 (Chinzei Y, Yano I)
– metabolism by ground squirrels in natural environment 158:199 (Bintz GL)
– reserves, susceptibility of mice – to natural challenges 157:551 (Bronson FH)
Fatty acid metabolism in fasting seal pups 157:445 (Castellini MA, et al)
Fatty acids, effects of osmolytes on oxidation of – in skate liver mitochondria 156:845 (Ballantyne JS, Moon TW)
– –, free, in hamster plasma during thermogenesis 155:679 (Heldmaier G, Seidl K)
– – in grey seals 159:649 (Schweigert FJ, et al)
Ferritin in lamprey larvae 156:269 (Macey DJ, et al)
Fever in a leech 159:281 (Cabanac M)
Fibroblasts, protein synthesis and thermotolerance in trout – 158:457 (Mosser DD, Bols NC)
Finch, see *Carpodacus*, *Leucosticte*
Fish, see Pisces
Flatworm, see *Notoplana*
Fleshfly, see *Sarcophaga*, Sarcophagidae
Flight in a wind tunnel, behavior and metabolism of pigeons during – 157:91 (Rothe H-J, Nachtigall W), 99 (Rothe H-J, et al), 111 (Hirth K-D, et al), 117 (Biesel W, Nachtigall W)
– in honey bees 158:711 (Jungmann R, et al), 719 (Feller P, Nachtigall W), 729 (Nachtigall W, et al), 739 (Rothe U, Nachtigall W)
–, mating, see mating flight
–, role of 6-phosphofructokinase in locust muscle during – 157:315 (Wegener G, et al)
Flounder, see *Platichthys*, *Pseudopleuronectes*
Fluid insufficiency hypothesis, evidence against – in spiders 158:437 (Prestwich KN)
Fly, see Diptera
FMRFamide actions on coelenterate contractile system 157:31 (Anctil M)
Food consumption, effect on beetle ion and water balance 158:91 (Frisbie MP, Dunson WA)
– intake, effect of hamster daily torpor 160:609 (Ruf T, et al)
–, uptake, storage and use in bumblebees 158:263 (Surholt B, et al)
Foot epithelium, paracellular water uptake in slug – 156:285 (Uglem GL, et al)

foraging strategies in wasps 154:175 (Heinrich B)
force maintenance in brachiopod muscle 157:651 (Wilkens JL)
forestomach, motility and flow of digesta in llama – 154:529 (Heller R, et al)
fowl, see also chicken, *Gallus*, hen
– cold vasodilatation in Bantam hen brood patch 155:703 (Mitgård U, et al)
– effects of temperature and hypoxia on breathing patterns 156:109 (Brackenbury J, Gleeson M)
– ionic permeability of intestine 157:181 (Grubb BR, et al)
– osmoregulation in dehydrated heat exposed – 155:227 (Arad Z, et al)
– osmotic balance and pituitary function 156:103 (Hall TR, et al)
– osmotic release of hormones 156:399 (Arad Z, et al)
– plasma hormones during dehydration 156:383 (Árnason SS, et al)
– renal plasma flow autoregulation 160:663 (Wideman Jr RF)
freeze-avoidance, glycerol biosynthesis in moth larvae 159:461 (Churchill TA, Storey KB)
freeze tolerance in antarctic nematodes 160:167 (Pickup J)
– in arctic insect larvae 158:175, 661 (Kukal O, et al)
– in European wall lizard 160:137 (Claussen DL, et al)
– in frogs 155:29 (Storey KB, Storey JM); 156:191 (Storey JM, Storey KB)
– tolerant insects, polyol synthesis in – 160:77 (Storey JM, Storey KB)
freezing and glycolysis in frog liver 157:373 (Storey KB)
– effects on gall fly larva cellular metabolism 155:333 (Storey JM, Storey KB)
frog, see *Chiromantis*, *Eleutherodactylus*, *Hyla*, *Hyperolius*, *Pseudophryne*, *Rana*, *Xenopus*
fuel homeostasis in swimming seal 160:627 (Davis RW, et al)
fulica, gas exchange in eggs 159:389 (Carey C, et al)
fundulus, adrenergic receptors and Cl secretion 154:343 (May SA, et al)
– eurythermality of myofibrils 153:167 (Sidell BD, et al)
– inhibition of Cl secretion in opercular epithelium 156:183 (May SA, Degnan KJ)
– sulfide detoxification by mitochondria 160:519 (Bagarinao T, Vetter RD)
fungi, see *Neurospora*
fur, effects on solar heat gain and ultraviolet irradiance in squirrels 158:213 (Walsberg GE)

G

GABA induction of mollusc larval metamorphosis and L-α,ω-diamino acids 155:403 (Trapido-Rosenthal HG, Morse DE)
gadus, cardiovascular control during hypoxia 160:287 (Fritsche R, Nilsson S)
– catecholamine uptake in swimbladder 155:479 (Ungell A-L)
–, energy reserves during starvation and refeeding 156:469 (Black D, Love RM)
–, gas secretion and resorption in swimbladder 155:319 (Harden Jones FR, Scholes P)
–, nerve impulse-induced catecholamine release 160:401 (Ehrenström F, Ungell A-L)
–, VIP in the swimbladder 154:627 (Lundin K, Holmgren S)
Galactan, structural analysis of snail – 159:629 (Knels U, Bretting H)
Gall fly, see *Eurosta*
Gallotia, sodium chloride transport across ileum 157:865 (Badia P, et al)
–, vasopressin effects on intestinal electrolyte transport 159:745 (Lorenzo A, et al)
Gallus, see also chicken, fowl, hen
–, brain temperature and dehydration 154:295 (Arad Z, et al)
–, brain temperature regulation 153:241 (Midtgård U, et al)
–, dietary sodium and GFR autoregulation 160:7 (Vena VE, et al)
–, electrical parameters and Na concentration in colon 158:19 (Grubb BR, Bentley PJ)
–, function of caecal bulb 159:51 (Thomas DH, Skadhauge E)
–, glucocorticoid actions in colon 159:131 (Grubb BR, Bentley PJ)
–, pineal melatonin secretion 158:381 (Sigüenza AF, et al)
–, pineal NAT activity 159:37 (Binkley S, et al)
–, potassium transport across intestines 160:17 (Grubb BR, Bentley PJ)
–, threshold for shivering in aerobic and anaerobic muscles 158:431 (Aulie A, Tøien Ø)
Gambusia, amylase gene-enzyme system 159:237 (Yardley DG)
Gametogenesis, sexual differences in frogs 159:473 (Merkle S)
Gamma-glutamyl transpeptidase, role in salmon intestinal amino-acid transport 157:161 (Bell JG, et al)
Gas diffusion in hen's eggshell membranes 158:567 (Visschedijk AHJ, et al)
Gas exchange, see also respiration
– – across chicken eggs 158:229 (Seymour RS, Visschedijk AHJ)
– –, cutaneous, in xeric-adapted frogs 157:423 (Stinner JN, Shoemaker VH)
– –, effects of adrenergic blockade on – in dogfish 158:39 (Metcalfe JD, Butler PJ)
– –, effects of temperature and altitude on chuckar – 157:129 (Chappell MA, Bucher TL)
– – in Adelie penguins 157:783 (Chappell MA, Souza SL)
– – in diving manatees 156:415 (Gallivan GJ, et al)
– – in frog eggs 157:477 (Seymour RS, Bradford DF)
– – in megapode bird incubation mounds 156:773 (Seymour RS, et al)
– – in montane and lowland coot eggs 159:389 (Carey C, et al)
– – of flying pigeons 157:99 (Rothe H-J, et al)
– – strategy in crocodile 159:761 (Perry SF)
– gland, catecholamine uptake in teleost swimbladder – 155:479 (Ungell A-L)
– secretion and resorption in cod swimbladder 155:319 (Harden Jones FR, Scholes P)
– transport in arachnid haemolymph 159:409 (Paul R, et al)
– – in haemolymph of crayfish exposed to acid water 160:483 (Jensen FB, Malte H)
Gastrin/cholecystokinin-like peptides in penaeid haemolymph 159:269 (Van Wormhoudt A, et al)
Gastropods, see *Haliotis*, *Helix*, *Morula*, *Pleurobranchaea*
Gaze, stabilization in frog and turtle 153A:495 (Dieringer N, et al)
Gecko, see *Bunopus*, *Ptyodactylus*
Geese, uric acid and urea in protein catabolism 157:491 (Robin J-P, et al)
Gen transfer to salmonid eggs 158:751 (Rokkones E, et al)
Geotria, non-haem, ferritin and haemosiderin iron in larvae 156:269 (Macey DJ, et al)
Gerbil, see *Gerbillus*, *Gerbilurus*, *Meriones*, *Tatera*
Gerbillurus, physiological effects of high fibre diet 155:211 (Buffenstein R)
Gerbillus, energy and water balance during torpor and hydropenia 154:535 (Buffenstein R)
Geukensia, adhesive protein in ribbed muscle 159:517 (Waite JH, et al)
Ghost crab, see *Ocypode*
Gila Monster, see *Heloderma*
Gill, adrenergic control of chloride transport in trout – 154:269 (Perry SF, et al)
– adrenoceptors in salamander 155:591 (Malvin GM)
–, carbonic anhydrase activity in crab – 160:217 (Morris S, Greenaway P)
–, carbonic anhydrase in trout – during hypercapnia 157:405 (Dimberg K, Höglund LB)
–, chloride absorption of crab – 159:21 (Onken H, Graszynski K)
–, chloride ATPase in crab – 160:223 (Siebers D, et al)
–, DA, 5-HT and cAMP in *Aplysia* – 156:57 (Weiss S, et al)
–, E-C coupling in *Aplysia* – smooth muscle 157:659 (Reilly WM, Peretz B)
–, effects of catecholamines on water influx in eel – 157:327 (Bennett MB, Rankin JC)
–, interactions of surfactants and catecholamines in fish – 156:727 (Stagg RM, Shuttleworth TJ); 157:429 (Stagg RM, Shuttleworth TJ)
– metabolism in trout 154:191 (Mommsen TP)
–, rapid adaptation of phospholipid composition in trout – 155:597 (Hazel RJ, Carpenter R)
–, transepithelial potential difference in crab – 157:345 (Drews G, Graszynski K)
–, water boundary layer in fish – 158:627 (Wright PA, et al)
–, water chemistry in trout – 159:527, 539 (Playle RC, Wood CM)
Gillichthys, luminal alkalinization in intenstine 156:803 (Dixon JM, Loretz CA)
Gills, changes in osmotic water permeability 154:1 (Ogasawara T, Hirano T)
–, evidence for H^+-pump in crab – 159:43 (Krippeit-Drews P, et al)

Gills, isolated, ion transport in flounder – 155:471 (Davis MS, Shuttleworth TJ)
–, pressure adaptation of Na^+/K^+-ATPase in teleost – 160:431 (Gibbs A, Somero GN)
–, vasoactivity of salamander – 155:241 (Malvin GM)
Gland, antennal, see antennal gland
–, rectal, see rectal gland
–, thyroid, see thyroid gland
Glider, see *Petauroides*
Glis, ambient temperature dependence of annual cycles 159:333 (Jallageas M, et al)
Glomerular filtration rate (GFR), autoregulation in fowl 160:7 (Vena VE, et al)
– intermittency in carp after transfer to salt water 154:225 (Elger M, et al)
Gluconeogenesis in lizard muscle following exercise 160:331 (Gleeson TT, Dalessio PM)
Glucose concentration in plasma of hibernating marmots 156:309 (Florant GL, et al)
–, effects of catecholamines in sea lamprey 152:35 (Dashow L, Epple A)
–, influence of diet on absorption in fish intestine 157:677 (Buddington RK)
– metabolism in harbor seal 153:275 (Davis RW)
–, plasma – in finch seasonal acclimatization 154:469 (Marsh RL, et al)
– tolerance in freshwater snail 160:41 (Liebsch M, Becker W)
– transport in marine fish intestine 152:79 (Ferraris RP, Ahearn GA)
– transport system in hagfish kidney 154:355 (Flöge J, et al)
– transport through fish renal brush border membranes 157:573 (Wolff NA, et al)
Glutamate dehydrogenase isozymes from a Japanese beetle 151:199 (Male KB, Storey KB)
–, transport through fish renal brush border membranes 157:573 (Wolff NA, et al)
Glutamic acid binding site on protist cilia 158:345 (Preston RR, Usherwood PNR)
Glutathione peroxidases, role in adaptation of toad tissues to hyperoxia 158:583 (Barja de Quiroga G, et al)
Glycera, volume regulation in red coelomocytes 151:133 (Costa CJ, Pierce SK)
Glycerol biosynthesis in freeze-avoiding insects 159:461 (Churchill TA, Storey KB)
– metabolism in freeze-tolerant insect 158:175 (Kukal O, et al)
– – in hibernating black bear 155:75 (Ahlquist DA, et al)
Glycogen degradation in an oligochaete during anoxia 159:707 (Putzer VM, et al)
– phosphorylase, activity in anoxic worms 160:201 (Michaelidis B, et al)
– – from frog brain 156:77 (Kamp G, Wegener G)
– storage and mating flight in ants 160:207 (Passera L, Keller L)
– synthesis from lactate in lizard muscle 156:277 (Gleeson TT)
Glygogenesis in lizard muscle following exercise 160:331 (Gleeson TT, Dalessio PM)
Glycogenolysis, hepatic, hormonal regulation of – in a reptile 159:323 (Janssens PA, Giuliano M)
– in shrimp muscle after escape swimming 159:753 (Gruschczyk B, Kamp G)
Glycolysis, effect of freezing on – in frog liver 157:373 (Storey KB)
–, regulation in cockles 159:195 (Meinardus-Hager G, et al)
–, trout myocardium under inhibition of – 160:691 (Hartmund T, Gesser H)
Gnathonemus, sensory gating by corollary discharge 151A:401 (Meyer JH, Bell CC)
Goat, see *Capra*
Goby, see *Gillichthys*
Goldfish, see also *Carassius*
–, anaerobic energy metabolism 159:263 (Waversveld J van, et al)
Gonadal activity, effect of external factors on hamster – 156:717 (Janský L, et al)
Gonadotropic hormone, transport and activity after oral administration in goldfish 157:753 (Suzuki Y, et al)
Gonadotropin secretion and the action of thyroxin in quails 157:837 (Follett BK, Nicholls TJ)
Goniopsis, sodium and chloride fluxes 157:599 (Zanders IP, Martelo M-J)
Gonyaulax, circadian rhythm in RNA 151:207 (Walz B, et al)
–, conditionality of clock resetting by 80 S inhibitors 157:85 (Thorey I, et al)
Granulocytes, adherence of guinea pig and human – 159:481 (Ehlers D, et al)
Grasshopper, see *Omocestus*
Ground squirrel, see *Citellus*, *Spermophilus*
Growth, effect on breathing pattern 155:171 (Mortola JP, Noworaj A)
– hormone, administration of salmon – in trout intestine 160:251 (Moriyama S, et al)
– –, kinetics during trout seawater adaptation 160:1 (Sakamoto T, et al)
– of blennie embryo 155:437 (Korsgaard B, Østergaard Andersen F)
Gryllus, auditory directionality 153A:523 (Boyd P, Lewis B)
–, phonotaxis 152A:257 (Schmitz B, et al)
–, tympanal membrane motion 151A:397 (Kleindienst H-U, et al)
Guanosine 3′:5′-monophosphate from silkworm eggs 155:693 (Takahashi SY)
Guinea pig, adherence of granulocytes 159:481 (Ehlers D, et al)
– –, catecholamine levels and thermoregulation 157:855 (Roth J, et al)
Gull, see *Larus*
Gustatory responses to amino acids of trout palate 153A:423 (Marui T, et al)
– specificity in the carp 153A:299 (Marui T, et al)
Gymnothorax, intestinal glucose transport 152:79 (Ferraris RP, Ahearn GA)
Gynaephora, glycerol metabolism 158:175 (Kukal O, et al)
–, mitochondrial degradation and cryoprotectant synthesis 158:661 (Kukal O, et al)

H

Habitat, effect on heat balance in starlings 155:395 (Dmi'el R, Tel-Tzur D)
–, effect on hedgehog hibernation patterns 155:177 (Dmi'el R, Schwarz M)
–, effects on marmot oxygen consumption and body temperature 160:491 (Armitage KB, et al)
Haemocyanin, see also hemocyanin
–, effects of purine bases on oxygen affinity of crayfish – 156:431 (Morris S, et al)
– in burrowing crabs 155:733 (Taylor AC, et al)
–, oxygen and carbon dioxide transport by crab – 157:873 (Morris S, et al)
– oxygen binding, effects of temperature on amphipod – 160:195 (Spicer JI, McMahon BR)
Haemocytes, exocytosis of prophenyl-oxidase system in crayfish – 156:175 (Johansson MW, Söderhäll K)
–, particle recognition by ascidian – 154:509 (Coombe DR, et al)
Haemodynamics in a gastropod mollusc 158:247 (Andrews EB, Taylor PM)
Haemoglobin, see also hemoglobin
–, adrenergic regulation of trout – oxygen affinity 152:67 (Nikinmaa M)
–, effects of decreased salinity on salmon – O_2 affinity 160:31 (Maxime V, et al)
Haemolymph, see also hemolymph
–, gas transport in arachnid – 159:409 (Paul R, et al)
–, gastrin-cholecystokinin-like peptides in penaeid – 159:269 (Van Wormhoudt A, et al)
–, lipoproteins of locust – 154:281 (Wheeler CH, et al)
–, neurodepressing factor in stick insect – 152A:283 (Finlayson LH, et al)
– pressure pulsation, recording in insects 154:635 (Sláma K)
–, purine bases affect haemocyanin oxygen affinity in crayfish – 156:431 (Morris S, et al)
Haemosiderin in lamprey larvae 156:269 (Macey DJ, et al)
Hagfish, see *Myxine*
Haldane effect in octopus hemocyanin 158:547 (Miller KI, Mangum CP)
Halichoerus, vitamin E and fatty acids 159:649 (Schweigert FJ, et al)
Haliotis, calcium-binding conchiolin shell peptides 157:717 (Cariolou MA, Morse DE)
–, facilitation of larval metamorphosis 155:403 (Trapido-Rosenthal HG, Morse DE)
Hamster, see also Cricetidae, *Cricetus*, *Mesocricetus*, *Phodopus*
–, angiotensin II and vasomotion 159:577 (Rettig R, et al)
–, BX, photoperiod, melatonin and testicular regression 158:301 (Pieper DR, et al)
–, effect of cold on cation transport in liver cells 154:159 (Horwitz BA, et al)
–, Harderian-thyroid gland interaction 158:697 (Hoffman RA, et al); 159:293 (Hoffman RA, et al); 160:269 (Hoffman RA, et al)
–, intracellular pH in hibernation and hypercapnia 156:251 (Malan A, et al)
Harbor seal, see *Phoca*
Harderian glands, interactions with thyroid hormones in hamsters 158:697 (Hoffman RA, et al); 159:293 (Hoffman RA, et al); 160:269 (Hoffman RA, et al)

Hatching, tissue thermogenesis in eider ducklings during – 158:513 (Grav HJ, et al)
Hearing, see also auditory, echolocation, phonotaxis
– auditory habituation in bullfrog 151 A:423 (Megela AL, Capranica RR)
– central projections of tettigoniid auditory fibers 151 A:389 (Oldfied BP)
– dependence of phonotaxis on cricket calling song features 153 A:509 (Stout JF, et al)
– directional effect of leg posture on locust – 152 A:509 (Adam L-J)
– echolocation in bats 152 A:421 (Vogler B, Neuweiler G)
– horizontal angle discrimination by echolocating bat 153 A:321 (Simmons JA, et al)
– integration of auditory sensory information in tettigoniids 152 A:495 (Oldfield BP, Hill KG)
– intensity discrimination in neotropical treefrogs 153 A:403 (Zelick RD, Narins PM)
– oscillating target detection by echolocating bat 153 A:385 (Schnitzler H-U, Flieger E)
– peripheral auditory directionality in crickets 153 A:523 (Boyd P, Lewis B)
– phonotaxis in crickets 152 A:257 (Schmitz B, et al)
– physiology of locust auditory receptors 152 A:475, 483 (Hill KG)
– response of bushcricket giant interneurons to low-frequency sound 151 A:449 (Shen J-X)
– responses of locust auditory interneurons to electrical stimulation of tympanal nerve 152 A:289 (Römer H, Rheinlaender J)
– song recognition in grasshopper 153 A:393 (Skovmand O, Pedersen SB)
– two-tone suppression in cricket auditory neuron 152 A:155 (Moiseff A, Hoy R)
– tympanal membrane motion in cricket ear 151 A:397 (Kleindienst H-U, et al)
Heart, see also cardiac, cardio –
– 5-HT action on lobster – under load 158:403 (Kuramoto T, Ebara A)
– accelerating effects of neurohormone D in cockroach 160:423 (Baumann E, et al)
– atrial natriuretic peptide in eel – 160:119 (Takei Y, et al)
– calcium paradox in isolated frog – 160:113 (Touraki M, Beis I)
– effect of contraction frequency on teleost – 156:135 (Driedzic WR, Gesser H)
– effect of PGI_2 on eel – in vitro 160:365 (Acierno R, et al)
– effects of hydraulic force generation on spider – 158:673 (Paul R, et al)
– energy metabolism in sea raven after acute temperature transition 160:511 (Sephton D, et al)
– flow effects on vagal action in toad – 155:571 (Courtice GP, McCloskey DI)
– frequency in arachnids 159:409 (Paul R, et al), 419 (Paul R, Fincke T)
– function in an gastropod mollusc 158:247 (Andrews EB, Taylor PM)
– hypoxic working in mole rat – 158:575 (Edoute Y, et al)
– mitochondrial arginine kinase from horseshoe crab – 160:449, 459 (Doumen C, Ellington WR)
– muscle, see also myocardium
– –, effects of anoxia and $[Ca^{2+}]_o$ on trout – 154:523 (Nielsen KE, Gesser H)
– performance and exogenous fuel availability in teleost and elasmobranch fish 154:593 (Driedzik WR, Hart T)
– physiology, effects of acidosis and extracellular calcium on turtle atria 154:385 (Yee Jr HF, Jackson DC)
– rate, autonomic nervous control during hypoxia in cod 160:287 (Fritsche R, Nilsson S)
– –, effect of cold stress on chick embryo – 155:195 (Tazawa H, Nakagawa S)
– –, effects of temperature and oxygen on perch – 157:771 (Gehrke PC, Fielder DR)
– – in diving manatees 156:415 (Gallivan GH, et al)
– – in swimming harbor seal 160:473 (Ponganis PJ, et al)
– of swimming seals and sea lions 160:637 (Williams TM, et al)
– rates and locomotion in spiders 157:451 (Bromhall C)
–, role of adenosine in frog – 156:839 (Lazou A, Beis Is)
–, systemic, effects of atrial peptides on – in octopus 158:637 (Agnisola C, et al)
– weights of high altitude camelids 158:469 (Jürgens KD, et al)
Heat balance, large surface area to body mass ratio in a marsupial 154:105 (Rübsamen K, et al)
– – of starlings from temperate and desert habitats 155:395 (Dmi'el R, Tel-Tzur D)
– – study of *Tubifex* anaerobiosis 155:587 (Famme P, Knudsen J)
– dissipation during long-term anoxia in brine shrimp embryos 160:357 (Hand SC)
–, effect on osmoregulation in fowl 155:227 (Arad Z, et al)
– exposure, effect on amylase and lipase activity in laying hens 156:297 (Osman AM)
– loss regulation in deer mouse and white rabbit 155:423 (Conley KE, Porter WP)
– production of bee caste members 159:551 (Fahrenholz L, et al)
–, responses of *Paramecium* to – 153 A:39 (Hennessey TM, et al)
– sensitivity of tobacco hornworm larvae 160:349 (Fittinghoff CM, Riddiford LM)
– shock, protein synthesis during – in tobacco hornworm 160:349 (Fittinghoff CM, Riddiford LM)
– – response in locust 156:813 (Whyard S, et al)
– stress in flesh flies 160:543 (Chen C-P, et al)
– – responses in quails 158:205 (Roberts JR, Baudinette RV)
Hedgehog, see *Erinaceus*, *Hemiechinus*
Heliothis, diuretic factors in nervous system 159:359 (Chung J-S, Keeley LL)
Helisoma, periostracum formation 155:177 (Kunigelis SC, Saludeddin ASM)
Helix, agglutinins from hemolymph and albumin gland 159:443 (Mullainadhan P, Renwrantz L)
–, inverse temperature acclimation during hibernation 160:677 (Bailey SER, Lazaridou-Dimitriadou M)
Heloderma, thermal dependence of locomotion and aerobic capacity 151:119 (John-Alder HB, et al)
Hemiechinus, hibernation patterns 155:117 (Dmi'el R, Schwarz M)
Hemilepistus, chemoreceptors 152 A:219 (Seelinger)
Hemitripterus, acid-base status after exercise 156:583 (Milligan CL, Farrell TP)
–, exogenous fuel availability and performance by the heart 154:593 (Driedzic WR, Hart T)
–, heart energy metabolism 160:511 (Sephton D, et al)
Hemocyanin, see also haemocyanin
–, Bohr, Root and Haldane effects in octopus – 158:547 (Miller KI, Mangum CP)
–, monoclonal antibodies to spider – 159:139 (Markl J, Winter S)
–, quaternary structure of crustacean – 158:271 (Stöcker W, et al)
–, structure and function in ghost crabs 157:501 (Johnson BA)
Hemodynamic effects of hemorrhage and hypernatremia in amphibians 157:807 (Hillman SS, Withers PC)
Hemoglobin, see also haemoglobin
–, allosteric effectors and O_2 affinity of carp – 159:255 (Wurm Th, Albers C)
–, allosteric transitions in tench – 157:145 (Weber RE, et al)
–, effect of pH and ATP on aquatic amphibian – 155:353 (Lima AAB, et al)
–, effects of NaCl and CO_2 on oxygen binding by *Artemia* – 156:355 (Davis BJ, Riggs AF)
–, thermodynamic analysis of oxygen equilibria in tench – 155:137 (Jensen FB, Weber RE)
–, three-state MWC analysis of oxygenation in tench – 160:407 (Jensen FB, et al)
Hemoglobins, intracellular, oxygen equilibria of bivalve – 156:675 (Grinich NP, et al)
Hemolymph, see also blood, haemolymph
–, agglutinins from snail – 159:443 (Mullainadhan P, Renwrantz L)
–, catecholamines in cockroach – 160:175 (Czapla TH, et al)
–, clotting of cockroach – 154:457 (Bohn H, Barwig B); 155:135 (Barwig B); 156:625 (Bohn H, Saks T); 158:527 (Ferstl S, et al)
– composition, effect of cell R15 hyperpolarization on – in *Aplysia* 155:297 (Bablanian GM, Treistman SN)
– – in tarantula 152:73 (Schartau W, Leidescher T)
–, effect of water carbonate alkalinity on acid-base balance of crab – 154:601 (Truchot J-P)
–, iron binding proteins in tobacco hornworm – 158:291 (Huebers HA, et al)
–, lipophorin from larval corn borer – 156:783 (Dillwith JW, et al)
–, lipoprotein ice nucleator in insect larval – 159:71 (Neven LG, et al); 160:51 (Lei Xu, et al)
Hemorrhage, cardiorespiratory responses of snakes to – 152:59 (Lillywhite HB, et al)
–, hemodynamic effects in amphibians 157:807 (Hillman SS, Withers PC)
Hen, see also chicken, fowl, *Gallus*
–, amylase and lipase activity during heat exposure 156:297 (Osman AM)

Hen, lateral diffusion in eggshell membranes 158:567 (Visschedijk AHJ, et al)
–, thermoregulatory responses to egg cooling in incubating – 156:303 (Tøien Ø, et al)
–, water economy in nests 156:823 (Andersen Ø, Steen JB)
Henle's loop, chloride fluxes in isolated plasma membranes 155:415 (Hannafin JA, Kinne R)
Hepatocytes, ouabain binding to trout – 160:93 (Bianchini L, et al)
Heterothermy in hedgehogs 160:299 (Fowler PA, Racey PA)
Hibernation, acid-base state in hamster during arousal from – 158:495 (Malan A, et al)
–, auditory brainstem responses in squirrels arousing from – 159:167 (Hamill NJ, et al)
–, bat pectoralis muscle during – 152:97, 137 (Yacoe ME)
–, effects of external factors on hamster – 154:427 (Janský L, et al)
–, effects on hamster intestinal enzymes 158:143 (Galluser M, et al)
–, energetics during – in rodents 159:667 (Snyder GK, Nestler JR)
–, glycerol metabolism in black bear during – 155:75 (Ahlquist DA, et al)
–, intracellular pH in hamster during – 156:251 (Malan A, et al)
–, inverse temperature acclimation in snails during – 160:677 (Bailey SER, Lazaridou-Dimitriadou M)
–, mitochondrial succinate dehydrogenase during – 154:495 (Pehowich DJ, Wang LCH)
–, pancreatic function in marmots during – 156:309 (Florant GL, et al)
– performance, allometry of – 156:13 (French AR)
–, pH dynamics of squirrel skeletal muscle during arousal from – 160:339 (McArthur MD, et al)
–, pH-temperature interactions in hamster – 158:487 (Malan A, Mioskowski E)
–, reduction of metabolism during – in mammals and birds 158:25 (Geiser F)
–, role of habitat in hedgehog – 155:117 (Dmi'el R, Schwarz M)
–, social thermoregulation in alpine marmots during – 158:151 (Arnold W)
Hirudo, nephridial nerve cell 152A:455 (Wenning A)
–, salt and volume loading effects on circulation 158:553 (Hildebrandt J-P, Zerbst-Boroffka I)
Holocentrus, electrophysiology of nucleus isthmi 152A:545 (Williams B, et al)
Holthuisana, respiratory properties of haemocyanin 157:873 (Morris S, et al)
Homarus, alanine transport by brush border membrane vesicles 156:537 (Ahearn GA, et al)
–, driver potentials in cardiac ganglion 151A:329 (Tazaki K, Cooke IM)
Honeybee, see *Apis*
Hormonal control of insect lipoprotein ice nucleators 160:51 (Lei Xu, et al)
– regulation of carbohydrate metabolism in a reptile 159:323 (Janssens PA, Giuliano M)
– responses of fowl to heat and dehydration 155:227 (Arad Z, et al)
Hormone, see also neurohormone
–, antidiuretic, role in dog and duck osmoregulation 151:241 (Gray DA, Simon E)
–, diuretic, control of beetle Malpighian tubules by – 156:407 (Nicolson SW, Hanrahan SA)
–, –, in insect larval nervous system 159:359 (Chung J-S, Keeley LL)
–, egg-laying, temperature modulation of synthesis in *Aplysia* 154:545 (Berry RW)
–, growth, kinetics during trout seawater adaptation 160:1 (Sakamoto T, et al)
–, hypertehalosemic, in cockroaches 160:187 (Hayes TK, Keeley LL)
–, juvenile, see also juvenile hormone
–, –, developmental regulation of biosynthesis by dipteran ring gland 159:383 (Richard DS, et al)
–, –, effects on ommochrome synthesis 154:13 (Hiruma K, et al)
–, –, esterases of Lepidoptera 154:213 (Wing KD, et al)
–, –, induction of antifreeze protein production in a beetle larva 151:233 (Horwath KL, Duman JG)
–, melanization, effect on ommochrome synthesis 154:13 (Hiruma K, et al)
–, moult-inhibiting (MIH), in crabs 156:617 (Webster SG, Keller R)
–, prothoracicotropic, activity in hornworm embryonic brain 157:279 (Dorn A, et al)
–, –, interspecific sensitivity in insects to – 156:767 (Roberts B, Gilbert LI)
–, red-pigment-concentrating (RPCH), from 6 crustacean species 160:373 (Gaus G, et al)
Hormones, 5-HT action on lobster heart under load 158:403 (Kuramoto T, Ebara A)
–, 20-hydroxyecdysone and enzymes in hornworm melanization 155:659 (Hiruma K, et al)
–, adipokinetic/hyperglycemic, in cockroaches 160:187 (Hayes TK, Keeley LL)
–, aldosterone regulates tight junctions in rabbit colon 160:381 (Hoffmann B, et al)
–, arginine vasotocin, prolactin, aldosterone and corticosterone in dehydrated fowl 156:383 (Árnason SS, et al)
–, caste-specific ecdysteroid titer in stingless bee development 160:617 (Hartfelder K, Rembold H)
–, changes during fasting in penguin chicks 158:395 (Le Ninan F, et al)
–, ecdysteroid metabolism in female tick 157:689 (Connat J-L, et al)
–, ecdysteroids from a pycnogonid 156:759 (Bückmann D, et al)
–, effects of eicosanoids on hagfish plasma and urine 158:621 (Wales NAM)
–, effects of methyltestosterone and oestradiol on leucine transport in trout intestine 151:247 (Habibi H, et al)
–, effects on pineal melatonin production in hamsters 158:301 (Pieper DR, et al)
– in tropical Ploceidae 156:641 (Dittami JP)
–, influence of age and splanchnic nerve on melatonin action in birds 158:601 (Mahata SK, et al)
–, intestinal administration of rsGH in rainbow trout 160:251 (Moriyama S, et al)
–, neural stimulation of fly ecdysteroid synthesis 157:543 (Henrich VC, et al)
–, neurohypophysial, cardiac effects in eel 160:213 (Chiu KW, Lee YC)
–, –, evolution of precursors of salmon – 160:601 (Hyodo S, et al)
–, octopaminergic regulation of JH biosynthesis in cockroach 160:241 (Thompson CS, et al)
–, osmoregulatory, in ducks during electrolyte imbalance 158:9 (Erbe K-H, et al)
–, osmotic release of arginine vasotocin and prolactin in fowl 156:399 (Arad Z, et al)
–, peptide, in crab X-organ sinus gland 153:191 (Stuenkel EL)
–, pertussis toxin blocks melatonin action in frogs 157:153 (White BH, et al)
–, pineal melatonin secretion in hens 158:381 (Sigüenza AF, et al)
–, pituitary function and osmotic balance in fowl 156:103 (Hall TR, et al)
–, prolactin binding in toad brain and kidney 155:611 (Lüthy IA, et al)
–, prolactin effect on eel thyroid function 154:199 (de Luze A, et al)
–, prolactin induced crop milk proteins in pigeon 154:237 (Horseman ND, Will CL)
–, role in crab color change 154:207 (Herreid II CF, Mooney SM)
–, role of Y-organ and cephalic gland in ecdysteroid production 152:91 (Jegla TC, et al)
–, sea lamprey catecholamines 152:35 (Dashow L, Epple A)
–, stress, during trauma in mollusc body wall 159:211 (Krontiris-Litowitz JK, et al), 225 (Cooper BF, et al)
–, thyroid, see also thyroid hormone
– –, effects on hamster Harderian glands 158:697 (Hoffman RA, et al); 159:293 (Hoffman RA, et al); 160:269 (Hoffman RA, et al)
– –, seasonal variations in lizards 154:409 (John-Alder HB)
–, thyroxine as photoperiodic mimetic in quails 157:829 (Follett BK, et al), 837 (Follett BK, Nicholls TJ)
–, transport and activity of orally administered GtH in goldfish 157:753 (Suzuki Y, et al)
Hornet, see *Vespula*
Horse, cardio-respiratory function during exercise 157:791 (Evans DL, Rose RJ)
Horseshoe crab, see *Limulus*
House finch, see *Carpodacus*
H^+-pump, evidence for – in crab gills 159:43 (Krippeit-Drews P, et al)
Hummingbird, see *Stellula*
Hydraulic force generation, effects on spider heart and circulation 158:673 (Paul R, et al)
Hydropenia, energy and water balance in gerbils during – 154:535 (Buffenstein R)
Hydrostatic pressure, effect on A_1 adenosine receptor binding properties in marine fishe 157:267 (Murray TF, Siebenaller JF)
Hydroxyecdysone, accumulation in tick egg 157:689 (Connat J-L, et al)
–, role in hornworm melanization 155:659 (Hiruma K, et al)

Hydroxytryptamine, effects on lobster heart under load 158:403 (Kuramoto T, Ebara A)
Hydrozoa, see *Polyorchis*
Hyla, energetics of vocalization 155:163 (Taigen TL, Wells KD)
Hymenoptera, see *Apis*, *Bombus*, *Chelonus*, *Dolichovespula*, *Pogonomyrmex*, *Solenopsis*, *Vespula*, *Xylocopa*
Hypercapnia, acclimational responses of tench to – 156:197, 205 (Jensen FB, Weber RE)
– adrenergic regulation of red cell pH and oxygen content during – in eels 159:687 (Hyde DA, Perry SF)
– and catecholamines in trout 158:107 (Vermette MG, Perry SF)
– carbonic anhydrase activity in trout during – 157:405 (Dimberg K, Höglund LB)
– effect on fish aerial ventilation 156:425 (Glass ML, et al)
– effects on trout blood acid-base balance 152:53 (Thomas S)
– exogenous and endogenous, in rainbow trout 151:185 (Thomas S, et al)
Hypernatremia, hemodynamic effects in amphibians 157:807 (Hillman SS, Withers PC)
Hyperolius, adaptation to arid environment 158:537 (Schmuck R, et al)
Hyperosmolal effects on amphibian cardiac muscle 154:325 (Hillman SS)
Hyperoxia, enzymatic adaptation of toad tissues to – 158:583 (Barja de Quiroga G, et al)
Hypoosmotic stress and effects of octopamine in horseshoe crab 156:481 (Edwards SC, Pierce SK)
Hyposaline exposure, crab antennal gland function during – 155:445 (Wheatly MG)
Hypotension and plasma renin activity in turtle 154:287 (Stephens GA, Creekmore JS)
– arterial, in ducks adapted to high salt intake 160:127 (Brummermann M, Simon E)
Hypothalamo-pituitary-adrenal axis in hedgehog thermoregulation 155:219 (Werner R, Vens-Cappell F)
Hypothermal stress, effects on chick embryo 155:195 (Tazawa H, Nakagawa S)
Hypothermia, nocturnal, in willow tit 151:109 (Reinertsen RE, Haftorn S)
–, short-term fasting effects on bird – 154:23 (Reinertsen RE, Haftorn S)
Hypotonic medium, adaptation of flounder renal function to – 157:21 (Elger E, et al)
Hypoxia, acclimation responses of tench to – 156:197, 205 (Jensen FB, Weber RE)
– anaerobic energy metabolism of goldfish during – 159:263 (Waversveld J van, et al)
– beta-adrenergic control of blood oxygen affinity in trout during – 157:667 (Tetens V, Christensen NJ)
– cardiovascular control in cod during – 160:287 (Fritsche R, Nilsson S)
– effect on crab ventilatory CPG 159:29 (Wilkens JL, et al)
– effect on extra- and intracellular pH in *Sipunculus* 155:13 (Pörtner HO, et al)
– effect on fish aerial ventilation 156:425 (Glass ML, et al)
– effects on pulmonary function and metabolism in anurans 152:125 (Withers PC, Hillman SS)
–, effects on fowl breathing patterns 156:109 (Backenbury J, Gleeson M)
–, effects on trout blood acid-base balance 152:53 (Thomas S)
–, effects on ventilatory control in turtle 151:145 (Glass ML, et al)
–, environmental, opine formation in marine invertebrates during – 159:617 (Kreutzer U, et al)
–, purinergic modulation of cardiac activity in flounder during – 159:105 (Lennard R, Huddart H)
–, responses of woodchuck and porcupine to – 159:641 (Boggs DF, Birchard GF)
–, role of catecholamines on trout ventilation during – 160:441 (Kinkead R, Perry SF)
–, working of mole rat heart during – 158:575 (Edoute Y, et al)

I

Ice nucleating protein from hornet queen 154:79 (Duman JG, et al)
– nucleator lipoprotein, hormonal control in insect larvae 160:51 (Lei Xu, et al)
– nucleators, removal of – in a beetle to promote supercooling 156:707 (Neven LG, et al)
Ichthyomyzon, electroreceptors 152A:209 (Bodznik D, Preston DG)
Ictalurus, tissue hypertrophy during cold acclimation 158:185 (Kent J, et al)
Iguana, see *Dipsosaurus*
Ileum, ion transport across lizard – 157:865 (Badia P, et al)
Image quality in crayfish superposition eye 151A:367 (Bryceson KP, McIntyre P)
Immune recognition in insects 157:759 (Brehélin M, Boemare N)
Inactivation, effect on mouse oxygen uptake and skeletal muscle 155:51 (Hoppeler H, et al)
Incubation, effects of temperature and moisture during – on hatchling turtles 158:117 (Packard GC, et al)
–, microclimate in ostrich nests 157:845 (Swart D, Rahn H)
– mounds, gas exchange in – 156:773 (Seymour RS, et al)
– temperature, effect on development of alligator embryos 159:183 (Deeming DC, Ferguson MWJ)
–, thermogenic, in pythons 157:393 (Ellis TM, Chappell MA)
–, water relations of eggs of mound building birds 157:413 (Seymour RS, et al)
Indomethacin, effects on hagfish blood and urine 158:621 (Wales NAM)
Infection, effects of – with *Schistosoma* on *Biomphalaria* metabolism 156:563 (Meyer R, et al); 160:41 (Liebsch M, Becker W)
Infrared sensitive tectal neurons, thresholds in snake – 151A:461 (Cock Buning T de)
Inheritance of sandhopper solar direction finding 151A:435 (Pardi L, Scapini F)
Inhibition, electrical, in butterfly retina 152A:169 (Matić T)
–, lateral, in *Limulus* eye 152A:517 (Renninger GH)
–, –, mediated by LDS interneurons in crayfish terminal ganglion 151A:261 (Reichert H, et al)
–, presynaptic, of crayfish mechanosensory afferents 153A:443 (Fricke RA, Kennedy D)
Inhibitors, influence on crab gill transepithelial voltage 157:345 (Drews G, Graszynski K)
– of 80 S translation in *Gonyaulax* circadian clock 157:85 (Thorey I, et al)
Inositol 1,4,5-triphosphate metabolism in squid photoreceptors 160:293 (Wood SF, et al)
– -triphosphate formation in insect antennae 160:99 (Boeckhoff I, et al)
Insecta, 6-phosphofructokinase in *Locusta* flight muscle 157:315 (Wegener G, et al)
–, acclimation in *Pogonomyrmex* 154:399 (MacKay WP, Sassaman CA)
–, adipokinetic/hyperglycemic hormones in *Blaberus* 160:187 (Hayes TK, Keeley LL)
–, AKH/RPCH-neuropeptides in Coleoptera 159:589 (Gäde G)
–, alkaline phosphatase iso-enzymes in *Bombyx* midgut 159:123 (Okada N, et al)
–, amines on evoked potentials in *Apis* brain 151A:469 (Mercer AR, Erber J)
–, amylases from *Drosophila* 159:237 (Yardley DG)
–, anaerobic metabolism in *Chironomus* and *Culex* larvae 158:307 (Redecker B, Zebe E)
–, arginase activity in *Bombyx* 155:653 (Aigaki T, Osanai M)
–, ascending auditory interneurons in *Caedicia* 152A:495 (Oldfield BP, Hill KG)
–, attractiveness of male *Acheta* calling song to females 153A:509 (Stout JF, et al)
–, auditory directionality in crickets 153A:523 (Boyd P, Lewis B)
–, auditory interneuron in *Teleogryllus* 152A:155 (Moiseff A, Hoy R)
–, calcium transport and deposition in *Musca* puparium 158:413 (Krueger RA, et al)
–, caste-specific hormone differences in *Scaptotrigona* 160:617 (Hartfelder K, Rembold H)
–, catecholamines in Dictyoptera 160:175 (Czapla TH, et al)
–, central projections of *Caedicia* auditory fibers 151A:389 (Oldfield BP)
–, cercus-to-giant interneuron system of *Tettigonia* 151A:449 (Shen J-X)
–, cGMP-dependent protein kinase from *Bombyx* eggs 155:693 (Takahashi SY)
–, chloride transport across *Manduca* integumentary epithelium 155:743 (Cooper PD, Jungreis AM)
–, chordotonal organ inhibits giant interneurones in *Periplaneta* 153A:377 (Bernard J, et al)
–, circadian pacemaker in *Leucophaea* optic tracts 152A:231 (Page TL)
–, circadian system in *Leucophaea* 153A:353 (Page TL)
–, cold and heat stress in Sarcophagidae 160:543 (Chen C-P, et al)
–, cold induced changes in *Gynaephora* caterpillars 158:661 (Kukal O, et al)

Insecta, cold receptors on *Speophyes* antennae 153 A: 343 (Corbière-Tichané G, Loftus R)
–, conditioning of *Drosophila* clock mutants 151 A: 545 (Jackson FR, et al)
–, control of melanization in *Manduca* 155: 659 (Hiruma K, et al)
–, conversion of wax scales into comb wax by *Apis* 156: 95 (Kurstjens SP, et al)
–, cost of tokking in *Psammodes* 157: 11 (Lighton JRB)
–, crustacean cardioactive peptide in *Locusta* 159: 5 (Stangier J, et al)
–, cryoprotectant synthesis in anoxic *Eurosta* 160: 77 (Storey JM, Storey KB)
–, cuticular water barrier in *Periplaneta* 159: 739 (Machin J, Lampert GJ)
–, development of *Locusta* auditory neurons 151 A: 499 (Boyan GS)
–, developmental changes in *Locusta* epidermis 154: 549 (Bouthier A, Lhonoré J)
–, diuretic factors in nervous system of *Heliothis* larvae 159: 359 (Chung J-S, Keeley LL)
–, effect of leg posture on locust hearing 152 A: 509 (Adam L-J)
–, effects of anoxia on *Sarcophaga* pupae 160: 683 (Kukal O, et al)
–, egg-specific protein in *Bombyx* 158: 1 (Indrasith LS, et al)
–, electrical stimulation of *Locusta* auditory pathway 152 A: 289 (Römer H, Rheinlaender J)
–, electrochemical gradients across locust Malpighian tubules 151: 175 (Morgan PJ, Mordue W)
–, electrophysiology of *Aedes* Malpighian tubules 154: 301 (Williams Jr JC, Beyenbach KW)
–, endothermy and energy metabolism in *Pantophthalmus* 156: 461 (Bartholomew GA, Lighton JRB)
–, endurance in *Blaberus* locomotion 160: 573 (Full RJ, Tullis A)
–, flight in *Apis* 158: 711 (Jungmann R, et al), 719 (Feller P, Nachtigall W), 729 (Nachtigall W, et al), 739 (Rothe U, Nachtigall W)
–, food uptake, storage and use in *Bombus* 158: 263 (Surholt B, et al)
–, foraging profits and thoracic temperature of *Apis* 160: 325 (Waddington KD)
–, glutamate dehydrogenase isozymes in *Popillia* 151: 199 (Male KB, Storey KB)
–, glycerol biosynthesis in *Epiblema* 159: 461 (Churchill TA, Storey KB)
–, glycerol metabolism in *Gynaephora* 158: 175 (Kukal O, et al)
–, glycogen storage and mating flight in ants 160: 207 (Passer L, Keller L)
–, haemolymph lipoproteins of *Locusta* 154: 281 (Wheeler CH et al.)
–, heat shock proteins in *Manduca* 160: 349 (Fittinghoff CM, Riddiford LM)
–, heat shock response in *Locusta* 156: 813 (Whyard S, et al)
–, hemolymph clotting in *Leucophaea* 154: 457 (Bohn H, Barwig B); 155: 135 (Barwig B); 156: 625 (Bohn H, Saks T); 158: 527 (Ferstl S, et al)
–, hormonal control of ice nucleators in *Cerachus* larvae 160: 51 (Lei Xu, et al)
–, hormonal control of *Onymacris* Malpighian tubules 156: 407 (Nicolson SW, Hanrahan SA)
–, ice nucleating protein from *Vespula* queens 154: 79 (Duman JG, et al)
–, immune recognition in *Locusta* 157: 759 (Brehélin M, Boemare N)
–, inhibition in *Papilio* retina 152 A: 169 (Matić T)
–, inhibitory pheromone of *Solenopsis* queen 153 A: 467 (Fletcher DJC, Blum MS)
–, inositol-triphosphate formation in *Periplaneta* antennae 160: 99 (Boeckhoff I, et al)
–, interspecific prothoracicotropic hormone 156: 767 (Roberts B, Gilbert LI)
–, iron binding proteins in *Manduca* 158: 291 (Huebers HA, et al)
–, juvenile hormone esterases of Lepidoptera 154: 213 (Wing KD, et al)
–, landmark learning in *Apis* 151 A: 521 (Cartwright BA, Collett TS)
–, lipophorin from *Diatrea* larvae 156: 783 (Dillwith JW, et al)
–, lipoprotein ice nucleator in *Tipula* larvae 159: 71 (Neven LG, et al)
–, metabolism and freezing in *Eurosta* larvae 155: 333 (Storey JM, Storey KB)
–, metabolism in *Apis* clusters 156: 143 (Southwick EE)
–, mutant sensitive to developmental temperature in *Drosophila* 151 A: 483 (Minke B)
–, Na and water balance in *Dytiscus* 158: 91 (Frisbei MP, Dunson WA)
–, neural stimulation of ecdysteroid synthesis in *Drosophila* 157: 543 (Henrich VC, et al)
–, neurodepressing factor in *Carausius* haemolymph 152 A: 283 (Finlayson LH, et al)
–, neurohormone inactivation by Malpighian tubules in *Periplaneta* 155: 511 (Baumann E, Penzlin H)
–, octopaminergic regulation of JH biosynthesis in *Diploptera* 160: 241 (Thompson CS, et al)
–, olfactory discrimination in *Drosophila* 152 A: 373 (Borst A)
–, olfactory receptors in *Carausius* 152 A: 459 (Tichy H, Loftus R)
–, ommatidium in ventral compound eye of *Sympetrum* 151 A: 285 (Armett-Kibel C, Meinertzhagen IA)
–, ommochrome synthesis in *Mamestra* larvae 154: 13 (Hiruma K, et al)
–, ornithin decarboxylase and vitellogenesis in *Drosophila* 160: 145 (Birnbaum MJ, Gilbert LI)
–, overwintering adaptations in *Ceruchus* 156: 707 (Neven LG, et al)
–, oxidative metabolism in *Manduca* midgut 157: 643 (Chamberlin ME)
–, oxidative metabolism in *Schistocerca* rectum 151: 191 (Chamberlin ME, Phillips JE)
–, parasite regulation of metamorphosis in *Trichoplusia* 155: 235, 583 (Jones D)
–, phenylalanine transport in *Blabera* midgut 156: 549 (Parenti P, et al)
–, pheromone-binding protein from *Antheraea* 160: 503 (Raming K, et al)
–, pheromone-triggered interneurons in *Bombyx* ventral nerve cord 152 A: 297 (Olberg RM)
–, phonotaxis in *Gryllus* 152 A: 257 (Schmitz B, et al)
–, photoperiodic induction of pupal diapause in *Sarcophaga* 154: 91 (Gnagey AL, Denlinger DL)
–, physiology of *Locusta* auditory receptors 152 A: 475, 483 (Hill KG)
–, pigment migration in *Manduca* eye 153 A: 59 (White RH, et al)
–, plant secondary metabolites in moth larvae 160: 389 (Wing M, Schneider D)
–, post-bloodmeal diuresis in *Aedes* 153: 257 (Williams JC, et al)
–, potassium transport in *Manduca* integument 153: 147 (Cornell JC, Jungreis AM)
–, prothoracicotropic hormone activity in *Manduca* embryonic brain 157: 279 (Dorn A, et al)
–, pyruvate kinase isozymes in *Periplaneta* 155: 339 (Storey KB)
–, recording of haemolymph pressure pulsations 154: 635 (Sláma K)
–, rectal oxygen consumption 153: 223 (Sell D, Houlihan DF)
–, ring gland activity in *Drosophila* 159: 383 (Richard DS, et al)
–, sex pheromone components of *Periplaneta* 152 A: 309 (Sass H)
–, song recognition in *Omocestus* 153 A: 393 (Skovmand O, Pedersen SB)
–, sorbitol dehydrogenase in *Bombyx* diapause eggs 160: 277 (Yaginuma T, et al)
–, sound production in cicadas 152 A: 183, 197 (Young D, Josephson RK)
–, spatial vision in *Apis* 151 A: 441 (Menzel R, Lieke E)
–, spectral receptors in *Sympetrum* retina and lamina 151 A: 295 (Meinertzhagen IA, et al)
–, stress-like reactions in *Drosophila* 157: 519 (Rauschenbach IYu, et al)
–, structure-function studies on *Periplaneta* neurohormone D 160: 423 (Baumann E, et al)
–, synapse frequency after chromatic deprivation in *Apis* 151 A: 477 (Hertel H)
–, temperature and oxygen effects on *Ephestia* eyes 158: 421 (Weyrauther E)
–, temperature effects on *Schistocerca* acid-base status 158: 763 (Harrison JM)
–, thermal behavior of *Apis* on feeding place 158: 135 (Schmaranzer S, Stabentheiner A)
–, thermoregulation and energetics in Asilidae 155: 561 (Morgan KR, et al)
–, thermoregulation and foraging in *Dolichovespula* and *Vespula* 154: 175 (Heinrich B)
–, thermoregulation of *Apis* colony 159: 551 (Fahrenholz L, et al)
–, thermoregulatory physiology of *Xylocopa* 156: 557 (Heinrich B, Buchmann SL)
–, trehalase in *Tenebrio* accessory glands and spermatophores 157: 765 (Yaginuma T, Happ GM)
–, trehalases from *Periplaneta* 155: 553 (Ogiso M, et al)
–, tympanal membrane motion in *Gryllus* 151 A: 397 (Kleindienst H-U, et al)
–, ventilatory motor patterns in *Corydalus* 153 A: 542 (Kinnamon SC, Kammer AE)
–, visual performance of *Cyrtodiopsis* 151 A: 407 (Burkhardt D, Motte I de la)

–, wing stroke frequency in *Calliphora* 153 A: 289 (Otzen H, Kuiper JW)
–, winter survival of cold hardy beetles 151: 225, 233 (Horwath KL, Duman JG)
Integument, potassium transport in tobacco hornworm – 153: 147 (Cornell JC, Jungreis AM)
Integumentary epithelium, chloride transport across *Manduca* – 155: 743 (Cooper PD, Jungreis AM)
Interneuron, auditory, sensitivity to ultrasound in cricket – 152 A: 155 (Moiseff A, Hoy R)
Interneurones, giant, inhibited by chordotonal organ in cockroach 153 A: 377 (Bernard J, et al)
Interneurons, auditory, physiology of tettigoniid – 152 A: 495 (Oldfield BP, Hill KG)
–, auditory, responses to electrical stimulation of tympanal nerve 152 A: 289 (Römer H, Rheinlaender J)
–, giant, response to low-frequency sound 151 A: 449 (Shen J-X)
–, local directional selective (LDS), in crayfish terminal ganglion 151 A: 261 (Reichert H, et al)
Intestinal administration of salmon growth hormone in trout 160: 251 (Moriyama S, et al)
– enzyme activities in a hibernator 158: 143 (Galluser M, et al)
– folds, osmoregulatory functions of eel – 158: 45 (Simonneaux V, et al)
– glucose transport in marine fish 152: 79 (Ferraris RP, Ahearn GA)
– solute uptake in vitro, method 152: 105 (Karasov WH, Diamond JM)
– transport in temperature-acclimated goldfish 151: 163 (Groot JA, et al)
Intestine, see also colon, ileum
– effects of vasopressin on electrolyte transport in lizard – 159: 745 (Lorenzo A, et al)
– electrical PD, short-circuit current and Na and Cl fluxes in flowl – 157: 181 (Grubb BR, et al)
– influence of diet on glucose absorption in fish – 157: 677 (Buddington RK)
– inhibition and disposition of alkaline phosphatase in trout – 157: 461 (Gasser KW, Kirschner LB)
– ion and water transport in seawater eel – 155: 311 (Ando M)
– luminal alkalinization in goby – 156: 803 (Dixon JM, Loretz CA)
– nutrient transport in coho salmon – 156: 163 (Collie NL)
– potassium transport across fowl – 160: 17 (Grubb Br, Bentley PJ)
– role in water conservation in dehydrated sparrow 158: 353 (Goldstein DL, Braun EJ)
– role of gamma-glutamyl transpeptidase on amino-acid transport in fish – 157: 161 (Bell JG, et al)
– role of mucus in ion transport in eel – 157: 295 (Simonneaux V, et al)
– sodium uptake in trout – 159: 275 (Aguenaou H, et al)
Intracellular pH regulation in crayfish neurons 157: 435 (Gaillard S, Rodeau JL)
Intrapulmonary chemoreceptor discharge 154: 393 (Barnes GM, Burger RE); 159: 597 (Adamson TP, et al)
Invertebrates, marine, anaerobiosis and acid-base status in – 155: 1, 13 (Pörtner HO, et al)
–, –, control of opine formation in – 159: 617 (Kreutzer U, et al)
Ion absorption, role of mucus in eel oesophagus 157: 187 (Simonneaux V, et al)
– exchange in sea anemone cells 156: 591 (Herrera FC, et al)
– –, role of mucus in eel intestine 157: 295 (Simonneaux V, et al)
– movement, ouabain-insensitive, stimulation by cAMP in shark rectal gland 154: 139 (Silva P, et al)
– –, transepithelial, in frog skin mucus 155: 97 (Stith BJ)
– regulation, chloride influx and efflux in freshwater amphipod 158: 81 (Bayliss D, Harris RR)
– –, role of crab antennal gland in – 155: 445 (Wheatly MG)
– –, sodium and chloride fluxes in a crab 157: 599 (Zanders IP, Martelo M-J)
– –, sodium uptake in tadpoles exposed to low pH water 156: 649 (Freda J, Dunson WA)
– transport across lizard ileum 157: 865 (Badia P, et al)
– – by locust Malpighian tubules 151: 175 (Morgan PJ, Mordue W)
– –, electrical parameters and Na concentration in fowl colon 158: 19 (Grubb BR, Bentley PJ)
– – in avian colon 159: 131 (Grubb BR, Bentley PJ)
– – in crab gills 159: 43 (Krippeit-Drews P, et al)
– – in seawater eel intestine 155: 311 (Ando M)
– – in *Tetrahymena* 156: 883 (Tsoukatos DC, Kapoulas VM)
– – in turtle salt glands 159: 609 (Marshall AT)
– –, regulation in flounder isolated gills 155: 471 (Davis MS, Shuttleworth TJ)
Ionic basis of resting potential of molluscan muscle 159: 305 (Dorsett DA, Evans CG)
– concentrations in octopus body fluid and tissues 156: 503 (D'Aniello A, et al)
– movements across chorion in salmon eggs 159: 771 (Eddy FB, et al)
– permeability of fowl intestine 157: 181 (Grubb BR, et al)
– regulation by salmon eggs 159: 249 (Shephard KL, McWilliams PG)
Ionoregulation, branchial, effect of copper on trout – 155: 635 (Laurén DJ, McDonald DG)
– in soft water fish 154: 35, 329 (Höbe H, et al); 158: 67 (Höbe H, McMahon BR)
Iridophores in reed frog skin 158: 537 (Schmuck R, et al)
Iron binding proteins in tobacco hornworm 158: 291 (Huebers HA, et al)
– internalization by chick muscle cells 158: 559 (Sorokin LM, Morgan EH)
– metabolism in juvenile lampreys 157: 731 (Youson JH, et al)
–, non-haem, in lamprey larvae 156: 269 (Macey DJ, et al)
– uptake by chicken erythroid cells 155: 201 (Lim BC, Morgan EH)
– – by vertebrate reticulocytes 157: 363 (Lim BC, et al)
Isoenzymes, pyruvate kinase – from frogs 156: 691 (Fournier P, Guderley H)
Isopoda, see *Porcellio*, *Porcellionides*
Isoprenaline infusion, mandibular gland secretion during – in red kangaroo 159: 601 (Beal AM)
Isozymes, alkaline phosphatase – in silkworm midgut 159: 123 (Okada N, et al)
–, specific, of glutamate dehydrogenase in a Japanese beetle 151: 199 (Male KB, Storey KB)
Ixodidae, see *Amblyomma*, *Ornithodoros*

J

Jaculus, excretion capacity adaptation to desert habitat 157: 237 (Baddouri Kh, et al)
Japanese quail, see also *Coturnix*
– –, thyroxine as photoperiodic mimetic 157: 829 (Follett BK, et al), 837 (Follett BK, Nicholls TJ)
Jasus, pyloric pattern generator 153 A: 17 (Rezer E, Moulins M)
Jellyfish, see *Polyorchis*
Johansen, Kjell: in memoriam 157: 403 (Linzen B)
Junction potentials in molluscan buccal muscles 159: 509 (Evans CG, Dorsett DA)
Juvenile hormone, control of ice nucleators in insect larvae by – 160: 51 (Lei Xu, et al)
– – esterases of Lepidoptera 154: 213 (Wing KD, et al)
– –, caste-specific differences in stingless bee 160: 617 (Hartfelder K, Rembold H)
– –, octopaminergic regulation of biosynthesis in cockroach 160: 241 (Thompson CS, et al)
–, stimulation of fly ornithine decarboxylase activity by – 160: 145 (Birnbaum MJ, Gilbert LI)

K

K, see potassium
Kangaroo, see *Aepyprymnus*
Katsuwonus, skinned muscle fibres 155: 63 (Johnstone IA, Brill R)
Kelp bass, see *Paralabrax*
Keton body metabolism in starving and parasitized snails 156: 563 (Meyer R, et al)
Ketones in whip scorpion defense secretion 157: 883 (Haupt J, et al)
Kidney, see also renal
–, development of urine concentrating ability in wallaby 156: 573 (Wilkes GE, Janssens PA)
–, dietary sodium and GFR autoregulation in fowl 160: 7 (Vena VE, et al)
– function in desert gerbils 160: 413 (Sasidharan TO, et al)
–, ion exchange in brush border membranes of dogfish – 159: 339 (Bevan C, et al)

Kidney osmolytes of xeric and mesic rodents 158:369 (Yancey PH)
–, prolactin binding in toad – 155:611 (Lüthy IA, et al)
–, role in water conservation in dehydrated sparrows 158:353 (Goldstein DL, Braun EJ)
Koala, see *Phascolarctos*

L

Lactate activity in shrimp muscle during temperature changes 154:85 (Thébault MT)
– dehydrogenase activity in shrimp muscle 154:85 (Thébault MT)
– – (LDH), temperature and pH effects on anuran muscle – 160:105 (Mendiola P, De Costa J)
– –, tissue-specific isoenzymes of – in *Limulus* 155:723 (Carlsson K-H, Gäde G)
– dehydrogenases, pressure inactivation in deep living fishes 155:647 (Hennessey Jr JP, Siebenaller JF)
–, glycogen synthesis from – in lizard muscle 156:277 (Gleeson TT)
– metabolism in harbor seal 153:275 (Davis RW)
– – in lizard muscle 160:331 (Gleeson TT, Dalessio PM)
– sensitivity of amphipod haemocyanin oxygen binding 160:195 (Spicer JI, McMahon BR)
Lagopus, role of urea in nitrogen excretion 155:71 (Mortensen A, Tindall A)
Lama, motility in the forestomach 154:529 (Heller R, et al)
–, oxygen binding properties of blood 158:469 (Jürgens KD, et al)
–, oxygen transfer by red blood cells 157:1 (Yamaguchi K, et al)
Lampetra, regulation of red cell pH 156:747 (Nikinmaa M)
Lamprey, see *Geotria*, *Ichthyomyzon*, *Lampetra*, *Mordacia*, *Myxine*, *Petromyzon*
Laqueus, tonic force maintenance in smooth muscle 155:651 (Wilkens JL)
Larus, blood volume and salt gland secretion 157:261 (Hughes MR)
–, osmoregulatory effects of angiotensin II 158:651 (Gray DA, Erasmus T)
Laryngeal nerve, cardiovascular responses to electrical stimulation in toads 156:363 (Van Vliet BN, West NH)
Latrodectus, cuticular permeability 159:243 (Hadley NF, Quinlan MC)
Learning, landmark – in bees 151A:521 (Cartwright BA, Collett TS)
Leech, see *Hirudo*, *Nephelopsis*
Lehmannia, contact-dehydration 156:285 (Uglem GL, et al)
Leiopotherapon, cardio-respiratory responses to temperature 157:771 (Gehrke PC, Fielder DR)
Leipoa, gas exchange in incubation mound 156:773 (Seymour RS, et al)
Leiurus, book lung function 159:419 (Paul R, Fincke T)
Lens, membrane permeability of amphibian and cephalopod – 154:333 (Jacob TJC, Duncan G)
Leopard shark, see *Triakis*
Lepeophtheirus, osmotic response 155:357 (Hahnenkamp L, Fyhn HJ)
Lepidogalaxias, effect of starvation on oxygen consumption and nitrogen excretion 156:701 (Pusey BJ)
Lepidoptera, see also *Bombyx*, *Ephestia*, *Gynaephora*, *Heliothis*, *Mamestra*, *Manduca*, moths, *Papilio*, *Trichoplusia*
–, juvenile hormone esterases 154:213 (Wing KD, et al)
Lepomis, sodium balance in acidic waters 157:555 (Gonzalez RJ, Dunson WA)
–, tissue hypertrophy during cold acclimation 158:185 (Kent J, et al)
Leptodactylus, pH and ATP effects on haemoglobin 155:353 (Lima AAB, et al)
Leptograpsus, dawn rhabdom breakdown 153A:365 (Stowe S)
–, polarisation sensitivity of retinula cells 153A:435 (Stowe S)
Leptonychotes, aerobic diving limits 151:171 (Kooyman GL, et al)
Leucin, effect of steroids on transport and absorption in trout intestine 151:247 (Habibi H, et al)
Leucophaea, circadian pacemaker activity 152A:231 (Page TL)
–, hemolymph clotting 154:457 (Bohn H, Barwig B); 155:135 (Barwig B); 156:625 (Bohn H, Saks T); 158:527 (Ferstl S, et al)
–, internal coupling in circadian system 153A:353 (Page TL)
Leucosticte, ventilation and oxygen consumption 158:57 (Clemens DT)
Leukocytes, temperature and stress effects on newt – 153A:81 (Bennett MF, Daigle KR)
Limpet, see *Patella*
Limulus, hypoosmotic stress and octopamine 156:481 (Edwards SC, Pierce SK)
–, lateral inhibition in the eye 152A:517 (Renninger GH)
–, mitochondrial arginine kinase from the heart 160:449, 459 (Doumen C, Ellington WR)
–, tissue-specific isoenzymes of D-lactate dehydrogenase 155:723 (Carlsson K-H, Gäde G)
Linzen, Bernt, 8 June 1931 – 5. August 1988, In memoriam 158:393 (Autrum H)
Lipase activity, change in heat exposed hen 156:297 (Osman AM)
Lipid synthesis and deposition, seasonal, in ground squirrels 158:199 (Bintz GL)
– transport, lipophorin from corn borer diapausing larvae 156:783 (Dillwith JW, et al)
– – system in trout 156:497 (Black D, Skinner R)
Lipophorin from corn borer larval hemolymph 156:783 (Dillwith JW, et al)
Lipoprotein ice nucleator in insect hemolymph 159:71 (Neven LG, et al); 160:51 (Lei Xu, et al)
Lipoproteins in locust haemolymph 154:281 (Wheeler CH, et al)
Littorina, heart function and haemodynamics 158:247 (Andrews EB, Taylor PM)
–, optical properties of eye 152A:435 (Hamilton PV, et al)
Liver cells, effect of cold on cation transport in hamster – 154:159 (Horwitz BA, et al)
–, freezing and glycolysis in frog – 157:373 (Storey KB)
– mitochondria, seasonal function in a hibernator 154:495 (Pehowich DJ, Wang LCH)
–, oxygen free radicals in agein frog – 160:65 (López-Torres M, et al)
–, vitamin E in seal – 159:649 (Schweigert FJ, et al)
Lizard, see *Anolis*, *Crotaphytus*, *Dipsosaurus*, *Eremias*, *Podarcis*, *Psammodromus*, *Sauromalus*, Scincidae, *Tupinambis*
Llama, see *Lama*
Lobster, see *Homarus*, *Jasus*, *Panulirus*
Locomotion, see also diving, flight, swimming
–, ciliary reversal in *Paramecium* 152A:385 (Hildebrand E, Dryl S)
–, dual reflex motor control of crab muscle receptor 153A:309 (Cannone AJ, Bush BMH)
–, effect of air velocity on fly wing stroke frequency 153A:289 (Otzen H, Kuiper JW)
–, effects on heart-rates in spiders 157:451 (Bromhall C)
–, energetics of desert beetle – 155:155 (Bartholomew GA, et al)
–, energetics of penguin and duck – 155:373 (Baudinette RV, Gill P)
–, energetics, thermal dependence and kinematics of insect – 160:573 (Full RJ, Tullis A)
–, energy production of young trout during and after – 155:485 (Wieser W, et al)
–, lobster pyloric pattern generator 153A:17 (Rezer E, Moulins M)
–, motor patterns in newt embryos 152A:535 (Soffe SR, et al)
–, neck flexion and flight control muscle activity in pigeon 153A:111 (Bilo D, Bilo A)
–, spikeless interaction of crayfish motoneuron dendrites 152A:335 (Nagayama T, et al)
–, sprint running and muscle contraction in lizards 155:541 (Marsh RL, Bennett AF)
Locomotor activity, effect on hamster daily torpor 160:609 (Ruf T, et al)
Locomotory energetics, effect of body temperature on lizard – 155:21 (Bennett AF, John-Alder HB)
Locust, see *Locusta*, *Schistocerca*
Locusta, crustacean cardioactive peptide in nervous system 159:5 (Stangier J, et al)
–, development of auditory neurons 151A:499 (Boyan GS)
–, developmental changes in epidermis 154:549 (Bouthier A, Lhonoré J)
–, effect of leg posture on hearing 152A:509 (Adam L-J)
–, electrical stimulation of auditory pathway 152A:289 (Römer H, Rheinlaender J)
–, electrochemical gradients across Malpighian tubules 151:175 (Morgan PJ, Mordue W)
–, flight muscle 6-phospho-fructokinase 157:315 (Wegener G, et al)
–, haemolymph lipoproteins 154:281 (Wheeler CH, et al)
–, heat shock response 156:813 (Whyard S, et al)
–, immune recognition 157:759 (Brehélin M, Boemare N)

–, physiology of auditory receptors 152 A: 475, 483 (Hill KG)
Loligo, $InsP_3$ metabolism in photoreceptors 160: 293 (Wood SF, et al)
L-pipecolic acid oxydation in mammalian organelles 160: 671 (Mihalik SJ, Rhead WJ)
Lugworm, see *Arenicola*
Lumbriculus, anaerobic energy metabolism 159: 707 (Putzer VM, et al)
Lumbricus, actin-modulating protein from body wall muscle 157: 615 (D'Haese J, Hinssen H)
–, myosin isoforms in body wall muscle 157: 171 (D'Haese J, Carlhoff D)
–, slow type myosin in gizzard muscle 157: 589 (Carlhoff D, D'Haese J)
–, soluble calcium-binding protein from muscle 158: 325 (Huch R, et al)
Lung, carbonic anhydrase activity in crab – 160: 217 (Morris S, Greenaway P)
–, gas exchange and air flow in snake – 157: 307 (Stinner JN)
–, gases in lizards during CO_2 loading 158: 591 (Ballam GO, Donaldson LA)
–, pulmonary morphometry in crocodile 159: 761 (Perry SF)
–, pulmonary vascular innervation in a snake 159: 677 (Donald JA, et al)
Lymnaea, cardioactive peptide 154: 29 (Geraerts WPM, et al)
Lysophosphatidylcholine acetyltransferase activity in trout liver 158: 363 (Livermore RC, Hazel JR)

M

Macropus, cardiac action potentials 158: 759 (Campbell TJ)
–, development of urine concentrating ability 156: 573 (Wilkes GE, Janssens PA)
–, energy and protein turnover 158: 237 (White RG, et al)
–, mandibular saliva during isoprenaline infusion 159: 601 (Beal AM)
–, physiological and metabolic changes with weaning 156: 829 (Wilkes GE, Janssens PA)
–, urea recycling during water restriction 155: 759 (Chilcott MJ, et al)
Macrotus, physiological and behavioral factors in distribution 156: 441 (Bell GP, et al)
Macrozoarces, antifreeze polypeptides 155: 81 (Hew CL, et al)
Magicicada, pure-tone song 152 A: 197 (Young D, Josephson RK)
Magnesium, distribution in estradiol treated trout 155: 347 (Björnsson BT, Haux C)
–, mobilization by blackbird embryos 160: 649 (Packard MJ, Packard GC)
Malpighian tubules, calcium transport from – to fly puparial cuticle 158: 413 (Krueger RA, et al)
– –, electrochemical gradients across locust – 151: 175 (Morgan PJ, Mordue W)
– –, hormonal control of beetle – 156: 407 (Nicolson SW, Hanrahan SA)
– –, inactivation of cockroach neurohormone D by – 157: 511 (Bäumann E, Penzlin H)
– –, secretagogue effects on mosquito – 154: 301 (Williams Jr JC, Beyenbach KW)
Mamestra, ommochrome synthesis 154: 13 (Hiruma K, et al)
Mammal, see Mammalia
Mammalia, acid-base state during arousal from hibernation in *Cricetus* 158: 495 (Malan A, et al)
–, adherence of guinea pig and human granulocytes 159: 481 (Ehlers D, et al)
–, aerobic diving limits of immature Wedell seals 151: 171 (Kooyman GL, et al)
–, allometry of hibernation performance 156: 13 (French AR)
–, allometry of mitochondria 156: 3 (Else PL, Holbert AJ)
–, altitudinal and seasonal effects on deer mice metabolism 159: 453 (Hayes JP)
–, amylases from rat 159: 237 (Yardley DG)
–, angiotensin II and vasomotion in hamsters 159: 577 (Rettig R, et al)
–, antidiuretic hormone in dog 151: 241 (Gray DA, Simon E)
–, auditory brainstem responses in *Citellus* 159: 159, 167 (Hamill NJ, et al)
–, blood viscosity in phocid seals 159: 153 (Wickham LL, et al)
–, body temperature cycles of *Erinaceus* 160: 299 (Fowler PA, Racey PA)
–, body water relations in two desert gerbil species 158: 127 (Goyal SP, et al)
–, breathing pattern and growth 155: 171 (Mortola JP, Noworaj A)
–, brown adipose tissue in *Clethrionomys* and *Apodemus* 158: 157 (Klaus S, et al)
–, BX, photoperiod, melatonin and testicular regression in hamster 158: 301 (Pieper DR, et al)
–, cardiac action potentials in *Macropus* 158: 759 (Campbell TJ)
–, cardiac output and stroke volume in swimming *Phoca* 160: 473 (Pónganis PJ, et al)
–, cardio-respiratory function in horse during exercise 157: 791 (Evans DL, Rose RJ)
–, cardiorespiratory responses of *Marmota* and *Erithrizon* 159: 641 (Boggs DF, Birchard GF)
–, catecholamines and thermoregulation in guina-pig 157: 855 (Roth J, et al)
–, chloride fluxes in rabbit Henle's loop 155: 415 (Hannafin JA, Kinne R)
–, circadian rhythms in *Mesocricetus* 153 A: 123 (Lees JG, et al)
–, CO_2 effects on *Ondatra* thermoregulation 156: 339 (MacArthur RA)
–, cold-adaptation and brown adipose tissue in *Phodopus* 155: 717 (Rafael J, et al)
–, cone systems in rabbit retina 151 A: 347 (Nuboer JFW, et al)
–, crystalline allantoin in urine of African Cricetidae 155: 493 (Buffenstein R, et al)
–, daily cycle in week-old rats 159: 569 (Mumm B, et al)
–, daily torpor in *Peromyscus* 154: 233 (Tannenbaum MG, Pivorun EB)
–, daily torpor in *Phodopus* 160: 609 (Ruf T, et al)
–, daily torpor in *Sminthopsis* 156: 129 (Geiser F, Baudinette RV)
–, development of urine concentrating ability in *Macropus* 156: 573 (Wilkes GE, Janssens PA)
–, digestion and metabolism of eucalypt foliage in marsupials 157: 67 (Foley WJ, Hume ID), 355 (Foley WJ)
–, digestion in nonruminant herbivores 156: 599 (Karasov WH, et al)
–, digestion in the koala 152: 43, 131 (Cork SJ, Hume ID); 153: 181 (Cork SJ, et al)
–, echolocation calls of emballonurid bats 151 A: 515 (Barclay RMR)
–, echolocation in *Nyctalus* und *Rhinolophus* 152 A: 421 (Vogler B, Neuweiler G)
–, effect of cold on cation transport in hamster liver cells 154: 159 (Horwitz BA, et al)
–, effect of training and inactivation on *Apodemus* oxygen uptake and skeletal muscle 155: 51 (Hoppeler H, et al)
–, effects of angiotensin in *Mesocricetus* 158: 703 (Rettig R, et al)
–, effects of diving in *Trichechus* 156: 415 (Gallivan GJ, et al)
–, effects of habitat on *Marmota* physiology 160: 491 (Armitage KB, et al)
–, energetics during torpor in rodents 159: 667 (Snyder GK, Nestler JR)
–, energy and protein turnover in three wallaby species 158: 237 (White RG, et al)
–, energy stores and reproduction in *Spermophilus* 154: 421 (Barnes BM)
–, evaporative water loss in *Peromyscus* and *Oryctolagus* 155: 433 (Conley KE)
–, excretion capacity in hydrated *Jaculus* 157: 237 (Baddouri Kh, et al)
–, external factors and hibernation in *Mesocricetus* 154: 427 (Janský L, et al)
–, external factors and testicular activity in *Mesocricetus* 156: 717 (Janský L, et al)
–, fatty acid metabolism in fasting *Mirounga* pups 157: 445 (Castellini MA, et al)
–, fuel homeostasis in swimming *Phoca* 160: 627 (Davis RW, et al)
–, glycerol metabolism in hybernating *Ursus* 155: 75 (Ahlquist DA, et al)
–, Harderian-thyroid gland interaction in hamsters 158: 697 (Hoffman RA, et al); 159: 293 (Hoffman RA, et al); 160: 269 (Hoffman RA, et al)
–, heart rate and oxygen consumption in swimming *Phoca* and *Zalophus* 160: 637 (Williams TM, et al)
–, heat balance in *Petauroides* 154: 105 (Rübsamen K, et al)
–, heat loss regulation in *Peromyscus* and *Oryctolagus* 155: 423 (Conley KE, Porter WP)
–, hibernation patterns in *Erinaceus* and *Hemiechinus* 155: 117 (Dmi'el R, Schwarz M)
–, histo- and biochemistry of *Myotis* muscles 160: 183 (Brigham RM, et al)
–, horizontal angle discrimination by *Eptesicus* 153 A: 321 (Simmons JA, et al)
–, hypothalamo-pituitary-adrenal axis in *Erinaceus* thermoregulation 155: 219 (Werner R, Vens-Cappell F)
–, hypoxic working in *Spalax* heart 158: 575 (Edoute Y, et al)
–, intestinal enzyme activities in *Cricetus* 158: 143 (Galluser M, et al)
–, intracellular pH during torpor in *Peromyscus* 159: 661 (Nestler JR)
–, intracellular pH in hibernation and hypercapnia in European hamster 156: 251 (Malan A, et al)

Mammalia, kidney osmolytes of xeric and mesic rodents 158:369 (Yancey PH)
–, lactate and glucose metabolism in *Phoca* 153:275 (Davis RW)
–, lipid synthesis and deposition in *Spermophilus* 158:199 (Bintz GL)
–, mandibular saliva and isoprenaline infusion in *Macropus* 159:601 (Beal AM)
–, metabolic effects of temperature and dehydration in *Rhynchotragus* 152:23 (Kamau JMZ, Maloiy GMO)
–, motility in *Lama* forestomach 154:529 (Heller R, et al)
–, myoglobin oxygen affinity 159:205 (Nichols JW, Weber LJ)
–, neck muscles in *Rangifer* during rutting season 157:45 (Kiessling K-H, et al)
–, nest building and brown adipose tissue thermogenesis in mice 157:39 (Schneider JE, et al)
–, neuroendocrine properties during *Mesocricetus* thermal adaptation 160:153 (Roth J, et al)
–, nonshivering thermogenesis in *Spalax* 154:145 (Haim A, et al)
–, oxygen supply in high altitude camelids 158:469 (Jürgens KD, et al)
–, oxygen transfer by high-altitude camelids and goat 157:1 (Yamaguchi K, et al)
–, oxygen transport in *Rangifer* and *Ovibos* 159:655 (Brix O, et al)
–, pancreatic function in euthermic and hibernating *Marmota* 156:309 (Florant GL, et al)
–, pectoralis muscle of *Eptesicus* during hibernation 152:97, 137 (Yacoe ME)
–, pH-temperature interactions on a protein and hibernation in *Cricetus* 158:487 (Malan A, Mioskowski E)
–, physiological and behavioral factors in distribution of *Macrotus* 156:441 (Bell GP, et al)
–, physiological and metabolic changes in *Macropus* with weaning 156:829 (Wilkes GE, Janssens PA)
–, physiological effects of high fibre diets on desert rodents 155:211 (Buffenstein R)
–, plasma free fatty acids during *Phodopus* thermogenesis 155:679 (Heldmaier G, Seidl K)
–, rabbit circadian activity 151A:359 (Nuboer JFW, et al)
–, radioglucose metabolism in *Spermophilus* 156:87 (Bintz GL)
–, reduction of metabolism during torpor 158:25 (Geiser F)
–, respiration in *Peromyscus* 155:751 (Chappell MA)
–, respiratory enzymes of homeothermic and heterothermic endotherms 155:125 (Geiser F, McMurchie EJ)
–, role of BA during NST in hamster 156:237 (Heldmaier G, Buchberger A)
–, seasonal adaptation of *Phodopus* brown adipose tissue 155:521 (Rafael J, et al)
–, seasonal changes in *Ondatra* oxygen storage capacity 160:593 (MacArthur RA)
–, seasonal changes in *Spermophilus* mitochondrial succinate dehydrogenase activity 154:495 (Pehowich DJ, Wang LCH)
–, seasonal torpor in dasyurid marsupials 157:335 (Geiser F, Baudinette RV)
–, single units in *Pteronotus* inferior colliculus 153A:67 (Bodenhamer RD, Pollak GD)
–, skeletal muscle pH in *Spermophilus* during arousal from hibernation 160:339 (McArthur MD, et al)
–, social effects on response to cold in *Crocidura* juveniles 159:301 (Nagel A)
–, social thermoregulation in *Marmota* 158:151 (Arnold W)
–, solar heat gain and ultraviolet irradiance effects in two squirrel species 158:213 (Walsberg GE)
–, solute uptake in mouse intestine 152:105 (Karasov WH, Diamond JM)
–, species differences in adrenal catecholamine distribution 155:367 (Racz K, et al)
–, spectral sensitivity of rabbit 151A:353 (Nuboer JFW, Moed PJ)
–, susceptibility of mice fat reserves to natural challenges 157:551 (Bronson FH)
–, target detection in *Eptesicus* 152A:447 (McCarty JK, Jen PH-S)
–, target detection in *Rhinolophus* 153A:385 (Schnitzler H-U, Flieger E)
–, target discrimination by echolocating *Myotis* 152A:275 (Habersetzer J, Vogler B)
–, temperature and annual cycles in *Glis* 159:333 (Jallageas M, et al)
–, thermal balance and wind in *Peromyscus* 154:619 (Chappell MA, Holsclaw III DS)
–, thermogenesis and reproduction in *Clethrionomys* 156:741 (Feist DD, Feist CF)
–, thermoregulation in *Antechinomys* 156:751 (Geiser F)
–, thermoregulation in kangaroo 153:175 (Rübsamen U et al.)
–, tight junction regulation in rabbit colon 160:381 (Hoffmann B, et al)
–, torpor in *Gerbillus* 154:535 (Buffenstein R)
–, transferrin-receptor interactions in – 157:363 (Lim BC, et al)
–, urea recycling in water-restricted wallabies 155:759 (Chilcott MJ, et al)
–, vitamin E and fatty acids in *Halichoerus* 159:649 (Schweigert FJ, et al)
–, water concentration in fasting *Mirounga* pups 160:537 (Castellini JM, et al)
–, water conservation in Indian desert gerbils 160:413 (Sasidharan TO, et al)
Mammals, species variation in L-pipecolic acid oxydation 160:671 (Mihalik SJ, Rhead WJ)
Man, adhesiveness of granulocytes 159:481 (Ehlers D, et al)
Manatee, see *Trichechus*
Mandibular saliva during isoprenaline infusion in red kangaroo 159:601 (Beal AM)
Manduca, chloride transport across integumentary epithelium 155:743 (Cooper PD, Jungreis AM)
–, control of melanization by DDC, phenoloxidase and 20-HE 155:659 (Hiruma K, et al)
–, heat shock proteins 160:349 (Fittinghoff CM, Riddiford LM)
–, iron binding proteins 158:291 (Huebers HA, et al)
–, oxidative metabolism in midgut 157:643 (Chamberlin ME)
–, pigment migration in compound eye 153A:59 (White RH et al.)
–, potassium transport in integument 153:14 (Cornell JC, Jungreis AM)
–, prothoracic gland sensitivity to interspecific prothoracicotropic hormone 156:767 (Roberts B, Gilbert LI)
–, prothoracicotropic hormone activity in embryonic brain 157:279 (Dorn A, et al)
Marmota, effects of habitat on oxygen consumption and body temperature 160:491 (Armitage KB, et al)
–, pancreatic function in euthermic and hibernating – 156:309 (Florant GL, et al)
–, social thermoregulation during hibernation 158:151 (Arnold W)
Marsupials, see also *Aepyprymnus*, *Antechinomys*, *Macropus*, *Petauroides*, *Phascolarctos*, *Thylogale*, *Trichosurus*
–, seasonal torpor in dasyurids 157:335 (Geiser F, Baudinette RV)
Mating flight, carbohydrate storage and energetics of – in ants 160:207 (Passera L, Keller L)
Mealworm beetle, see *Tenebrio*
Mechanoreception in newt embryos 152A:529 (Roberts A, Clarke JDW)
–, local interneurons mediating lateral inhibition in crayfish ganglion 151A:261 (Reichert H, et al)
Mechanosensory neurons, inhibition of crayfish – 153A:443 (Fricke RA, Kennedy D)
Medaka, see *Oryzias*
Megaloptera, see *Corydalus*
Megapodiidae, water relations of burried eggs 157:413 (Seymour RS, et al)
Meiofauna, thiobiotic and oxybiotic, oxygen detoxifying enzymes in – 158:335 (Morrill AC, et al)
Melanization, catecholamines in cockroach cuticle during – 160:175 (Czapla TH, et al)
–, control by DDC, phenoloxidase and 20-HE in *Manduca* 155:659 (Hiruma K, et al)
Melatonin, effect on quail thermoregulation 157:625 (Saarela, S, Heldmaier G)
–, effects on production of – in hamsters 158:301 (Pieper DR, et al)
–, effects on thermogenesis and reproduction in Alaskan vole 156:741 (Feist DD, Feist CF)
–, endogeneous regulation of pineal secretion in hens 158:381 (Sigüenza AF, et al)
–, implant effects on finch activity rhythms 153A:413 (Fuchs JL)
–, influence of age and splanchnic nerve on action of – in birds 158:601 (Mahata SK, et al)
–, pertussis toxin blocks action of – in frogs 157:153 (White BH, et al)
Menippe, temperature effects on neuromuscular properties 158:689 (Blundon JA)
Meriones, body water relations 158:127 (Goyal SP, et al)
–, water conservation strategies 160:413 (Sasidharan TO, et al)
Mesocricetus, see also hamster
–, circadian activity rhythms 153A:123 (Lees JG, et al)
–, effects of angiotensin 158:703 (Rettig R, et al)

, effects of external factors on hibernation 154:427 (Janský L, et al)
, external factors and testicular activity 156:717 (Janský L, et al)
, neuroendocrine properties during thermal adaptation 160:153 (Roth J, et al)
Metabolic changes in penguin chick seasonal acclimatization 154:317 (Barré H)
Metabolic changes with weaning in a wallaby 156:829 (Wilkes GE, Janssens PA)
control in whelk anaerobiosis 156:635 (Plaxton WC, Storey KB)
rate during sleep in penguin 154:487 (Stahel CD, et al)
–, sexual differences in frog – 159:473 (Merkle S)
–, temperature, sexual condition and seasonal effects on lizard – 154:311 (Patterson JW, Davies PMC)
rates of swimming roach 160:71 (Forstner H, Wieser W)
Metabolism, 2-methylvalerate formation in nematode mitochondria 154:349 (Rioux A, Komuniecki R)
aerobic, altitudinal and seasonal effects on deer mice – 159:453 (Hayes JP)
aerobic diving limit of seals 151:171 (Kooyman GL, et al)
anaerobic, effects on spider maximal activity 158:437, 449 (Prestwich KN)
–, in an oligochaete 159:707 (Putzer VM, et al)
–, in anoxia-tolerant marine mollusc 160:309 (Broods SPJ, Storey KB)
–, in aquatic insect larvae 158:307 (Redecker B, Zebe E)
–, in mussel muscle during contraction and catch 159:349 (Zange J, et al)
–, of goldfish 159:263 (Waversveld J van, et al)
–, of marine invertebrates 155:1, 13 (Pörtner HO, et al)
anaerobic succinate formation in sea mussel 153:267 (Zwaan A de, et al)
arrestment of carbohydrate – in *Artemia* embryos 156:451 (Carpenter JF, Hand SC)
ascorbate, in carp 160:549 (Dabrowski K)
bacterial symbionts in a gutless clam 152:3 (Felbeck H)
beta-alanine, in a sea anemone 154:181 (Kasschau MR, et al)
carbohydrate, hormonal regulation in a reptile 159:323 (Janssens PA, Giuliano M)
–, in exercising pike 156:67 (Schwalme K, Mackay WC)
–, in goldfish 154:477 (Thillart G van den, Smit H)
cellular, effects of freezing on – in gall fly larvae 155:333 (Storey JM, Storey KB)
changes in body temperature and plasma fuels in fasting penguins 156:521 (Groscolas R)
during long-term anoxia in brine shrimp embryos 160:357 (Hand SC)
during swimming in turtles 154:167 (Butler PJ, et al)
effect of hypoxia in anurans 152:125 (Withers PC, Hillman SS)
effects of anoxia on – of flesh fly pupae 160:683 (Kukal O, et al)
–, effects of habitat on – in marmot populations 160:491 (Armitage KB, et al)
–, effects of short-term fasting in penguin chicks 158:395 (Le Ninan F, et al)
–, effects of temperature and dehydration in the dik-dik antelope 152:23 (Kamau JMZ, Maloiy GMO)
–, energy, in molluscan ventricle 153:159 (Ellington WR)
–, –, in the koala 153:181 (Cork SJ, et al)
–, energy requirements of penguin chicks 160:61 (Culik B, et al)
–, energy reserves during starvation and refeeding in cod 156:469 (Black D, Love RM)
–, environmental modulation of calcium and phosophorus in turtle embryos 159:501 (Packard MJ, Packard GC)
–, fate of plant-derived allelochemicals in moth larvae 160:389 (Wink M, Schneider D)
–, fatty acid, in fasting seal pups 157:445 (Castellini MA, et al)
–, fuel homeostasis in swimming seal 160:627 (Davis RW, et al)
–, glutamate dehydrogenase isozymes from a Japanese beetle 151:199 (Male KB, Storey KB)
–, glycolytic enzyme binding of mollusc muscle during anaerobiosis 158:771 (Lazou A, et al)
– in bee clusters at cool temperatures 156:143 (Southwick EE)
– in reindeer buck muscles during rutting season 157:45 (Kiessling K-H, et al)
–, iodide, effect of prolactin on eel – 154:199 (de Luze A, et al)
–, iron, in lampreys 157:731 (Youson JH, et al)
–, keton body, in starving and parasitized snails 156:563 (Meyer R, et al)
–, lactate- and glucose, in harbor seal 153:275 (Davis RW)
–, lipid transport in fish 156:497 (Black D, Skinner R)
–, net flux of amino acids in *Tetrahymena* 152:27 (Davis JP, Stephens GC)
–, nocturnal hypothermia in willow tits 151:109 (Reinertsen, RE, Haftorn S)
– of bat muscles 160:183 (Brigham RM, et al)
– of bees during flight 158:729 (Nachtigall W, et al), 739 (Rothe U, Nachtigall W)
– of eucalypt foliage in marsupials 157:67 (Foley WJ, Hume ID), 355 (Foley WJ)
– of inositol 1,4,5-triphosphate in squid photoreceptors 160:293 (Wood SF, et al)
– of trout gills 154:191 (Mommsen TP)
– of water-restricted wallabies 155:759 (Chilcott MJ, et al)
–, oxidative, in hornworm midgut 157:643 (Chamberlin ME)
–, oxidative, in locust rectum 151:191 (Chamberlin ME, Phillips JE)
–, physiological factors relating to activity – in lizards 154:113 (Bennett AF, et al)
– physiology of exercise in a spider 155:529 (Anderson JF, Prestwich KN)
–, preparatory adaptations for winter survival in cold hardy beetles 151:225, 233 (Horwath KL, Duman JG)
–, protein, in hibernating bat muscle and liver 152:137 (Yacoe ME)
–, radioglucose, in ground squirrels 156:87 (Bintz GL)
–, reduction during hibernation and torpor 158:25 (Geiser F)
–, regulation of glycolysis in cockles 159:195 (Meinardus-Hager G, et al)
–, RMR in boid snakes 157:227 (Chappell MA, Ellis TM)
–, short-term fasting effects on bird – 154:23 (Reinertsen RE, Haftorn S)
–, strategies for nocturnal survival in northern birds 156:655 (Reinertsen RE, Haftorn S)
–, substrate, in seasonal acclimatized finches 154:469 (Marsh RL, et al)
–, temperature effects on parrot – 159:561 (Bucher TL, Morgan KR)
–, thermal dependence of locomotory energetics and aerobic capacity in Gila Monster 151:119 (John-Alder HB, et al)
–, trimethylamine, in fish 158:609 (Charest RP, et al)
–, trout myocardium under inhibition of glycolysis 160:691 (Hartmund T, Gesser H)
Metamorphosis, larval, facilitation by L-α, ω-diamino acids in a mollusc 155:403 (Trapido-Rosenthal HG, Morse DE)
–, parasite regulation of host insect – 155:235, 583, 645 (Jones D)
Methyltestosterone, effect on leucin transport in trout intestine 151:247 (Habibi H, et al)
Methylvalerate formation in nematode mitochondria 154:349 (Rioux A, Komuniecki R)
Mice, susceptibility of fat reserves to natural challenges 157:551 (Bronson FH)
Microinjection of MThgH fusion gene into fertilized salmonid eggs 158:751 (Rokkones E, et al)
Midgut, alkaline phosphatase isoenzymes in silkworm – 159:123 (Okada N, et al)
–, oxidative metabolism in tobacco hornworm – 157:643 (Chamberlin ME)
–, phenylalanine transport in cockroach – 156:549 (Parenti P, et al)
Migratory behaviour and pectoralis muscle in birds 158:165 (Lundgren BO, Kiessling K-H)
Mirounga, fatty acid metabolism in fasting pups 157:445 (Castellini MA, et al)
–, water concentration in fasting pups 160:537 (Castellini JM, et al)
Mitochondria, allometry of mammalian and reptilian – 156:3 (Else PL, Holbert AJ)
–, location of L-pipecolic acid oxydation in mammals 160:671 (Mihalik SJ, Rhead WJ)
–, lysophosphatidylcholine acetyltransferase activity in trout liver – 158:363 (Livermore RC, Hazel JR)
–, 2-methylvalerate formation in *Ascaris* – 154:349 (Rioux A, Komuniecki R)
–, osmolyte effects on fatty acid oxidation in liver – 156:845 (Ballantyne JS, Moon TW)
–, oxidative metabolism in hornworm midgut – 157:643 (Chamberlin ME)
–, phospholipid molecular species in thermally-acclimated trout liver – 156:665 (Hazel JR, Zerba E)
–, sulfide detoxification by fish – 160:519 (Bagarinao T, Vetter RD)

Mitochondrial arginine kinase from *Limulus* heart 160:449, 459 (Doumen C, Ellington WR)
– degradation in freeze-tolerant arctic caterpillars 158:661 (Kukal O, et al)
– membrane respiratory enzymes 155:125 (Geiser F, McMurchie EJ)
– succinate dehydrogenase activity during hibernation 154:495 (Pehowich DJ, Wang LCH)
Mnemiopsis, smooth muscle cells 154:257 (Anderson PAV)
Moisture, effects during incubation on hatchling turtles 158:117 (Packard GC, et al)
Mole rat, see *Spalax*
Mollusca, acid-base regulation in *Otala* 156:347 (Barnhart MC)
–, adhesive foam of *Mytilus* byssus 156:491 (Waite JH)
–, adhesive protein in *Geukensia* ribbed muscle 159:517 (Waite JH, et al)
–, aerial and aquatic respiration of *Morula* 156:247 (Uma Devi V, et al)
–, afferent and efferent components in *Octopus* retina 151A:381 (Patterson JA, Silver SC)
–, agglutinins in *Helix* 159:443 (Mullainadhan P, Renwrantz L)
–, amino acid transport in *Mytilus* gill 156:259 (Wright SH)
–, amino acid uptake by *Mytilus* gill 154:249 (Wright SH, et al)
–, anaerobic energy metabolism in *Mytilus* muscle 159:349 (Zange J, et al)
–, anaerobic succinate formation in *Mytilus* 153:267 (Zwaan A de, et al)
–, anaerobiosis of *Patella* foot muscle 158:771 (Lazou A, et al)
–, anal water uptake in pulmonate snails 156:291 (Neuckel W)
–, atrial gland peptides in *Aplysia* 156:43 (Nagle GT, et al)
–, atrial peptide effects on *Octopus* heart 158:637 (Agnisola C, et al)
–, bacterial symbionts in *Solemya* 152:3 (Felbeck H)
–, calcium-binding conchiolin shell peptides from *Haliotis* 157:717 (Cariolou MA, Morse DE)
–, cardioactive neuropeptide in *Lymnaea* 156:29 (Geraerts WPM, et al)
–, cerebral ganglia neurons of *Pleurobranchaea* 153A:533 (McClellan AD)
–, circadian organization in *Aplysia* 153A:133 (Lickey ME, et al)
–, circadian period of *Aplysia* eye 151A:253 (Woolum JC, Strumwasser F)
–, contact-dehydration in *Lehmannia* 156:285 (Uglem GL, et al)
–, DA, 5-HT and cAMP in *Aplysia* gill 156:57 (Weiss S, et al)
–, E-C coupling in *Aplysia* smooth muscle 157:659 (Reilly WM, Peretz B)
–, effects of humoral trauma factors in *Aplysia* 159:211 (Krontiris-Litowitz JK, et al), 225 (Cooper BF, et al)
–, effects of pH and CO_2 on *Octopus* hemocyanin 158:547 (Miller KI, Mangum CP)
–, energy metabolism in *Busycon* ventricle 153:159 (Ellington WR)
–, enzyme binding and glycolytic control of anaerobiosis in *Busycotypus* 156:635 (Plaxton WC, Storey KB)
–, eye of *Littorina* 152A:435 (Hamilton PV, et al)
–, facilitation of larval metamorphosis in *Haliotis* 155:403 (Trapido-Rosenthal HG, Morse DE)
–, glucose tolerance in *Biomphalaria* 160:41 (Liebsch M, Becker W)
–, heart function and haemodynamics in *Littorina* 158:247 (Andrews EB, Taylor PM)
–, $InsP_3$ metabolism in *Loligo* photoreceptors 160:293 (Wood SF, et al)
–, inverse temperature acclimation in hibernating *Helix* 160:677 (Bailey SER, Lazaridou-Dimitriadou M)
–, ionic concentrations of *Octopus* body fluid and tissues 156:503 (D'Aniello A, et al)
–, keton body metabolism in *Biomphalaria* 156:563 (Meyer R, et al)
–, lens membrane permeability in *Sepiola* 154:333 (Jacob TJC, Duncan G)
–, muscle junction potentials in *Philine* 159:509 (Evans CG, Dorsett DA)
–, oxygen equilibria of *Barbatia* intracellular hemoglobins 156:675 (Grinich NP, et al)
–, peptides in *Aplysia* atrial gland 154:435 (Kelner KL, et al)
–, periostracum formation in *Helisoma* 155:177 (Kunigelis SC, Saluedin ASM)
–, protein kinase phosphorylates pyruvate kinase in *Busycon* 160:309 (Brooks SPJ, Storey KB)
–, pyruvate kinase in *Busycotypus* 155:291 (Plaxton WC, Storey KB)
–, pyruvate kinase modification during anaerobiosis in *Patella* 160:529 (Gaitanaki C, et al)
–, pyruvate reductases of *Cardium* 156:873 (Meinardus-Hager G, Gäde G)
–, R15 hyperpolarization and hemolymph composition in *Aplysia* 155:297 (Bablanian GM, Treistman SN)
–, regulation of glycolysis in *Cardium* 159:195 (Meinardus-Hager G, et al)
–, response diversity in *Busycon* proboscis muscles 159:717, 727 (Huddart H, et al)
–, resting potential of *Philine* muscle 159:305 (Dorsett DA, Evans CG)
–, stretch activation in *Mytilus* skinned smooth muscle 154:187 (Gagelmann M, et al)
–, structural analysis of snail galactans 159:629 (Knels U, Bretting H)
–, temperature dependence of *Aplysia* egg laying 156:21 (Pinsker HM, Parsons DW)
–, temperature modulation of egg-laying hormone synthesis in *Aplysia* 154:545 (Berry RW)
–, ultrafiltration by bivalve podocytes 156:151 (Meyhöfer E, et al)
–, uncoupling in *Busycon* muscle 158:501 (Huddart H, Hill RB)
–, uricolytic enzymatic system in *Xeropicta* and *Cernuella* 159:115 (Lazaridou-Dimitriadou M, Kaloyianni M)
–, ventilation and circulation during exercise in *Octopus* 156:683 (Houlihan DF, et al)
Molting, see also moult, moulting
–, role of Y-organ and cephalic gland in crayfish – 152:91 (Jegla TC, et al)
Monoamine actions on crab skeletal muscle 154:503 (Huddart H, Battram JC)
Monoclonal antibodies to spider hemocyanin 159:139 (Markl J, Winter S)
Mordacia, non-haem, ferritin and haemosiderin iron in larvae 156:269 (Macey DJ, et al)
Morone, blood oxygen transport 154:365 (Nikinmaa M, et al)
Morula, aerial and aquatic respiration 156:247 (Uma Devi V, et al)
Mosquito, see *Aedes*
Mosquitofish, see *Gambusia*
Moths , see also Lepidoptera
–, fate of plant secondary metabolites in – 160:389 (Wing M, Schneider D)
Motion discrimination in toads 152A:241 (Burghagen H, Ewert J-P)
Motoneuron dendrites, local spikeless interaction of crayfish – 152A:335 (Nagayama T, et al)
Motor patterns, buccal, in a gastropod 153A:533 (McClellan AD)
– – in newt embryos 152A:535 (Soffe SR, et al)
– –, ventilatory, in an aquatic insect 153A:542 (Kinnamon SC, Kammer AE)
Moult, see also molting
–, endocrine correlates in Ploceidae 156:641 (Dittami JP)
–, energetic cost in penguins 155:515 (Brown CR)
– -inhibiting hormone in crabs 156:617 (Webster SG, Keller R)
Moulting, chloride transport across *Manduca* integumentary epithelium during – 155:745 (Cooper PD, Jungreis AM)
Mouse, see also *Apodemus*, mice
– metallothionein human growth hormone fusion gene, transfer to salmonid eggs 158:751 (Rokkones, et al)
–, method of intestinal solute uptake in vitro 152:105 (Karasov WH, Diamond JM)
–, nest building and brown adipose tissue thermogenesis 157:39 (Schneider JE, et al)
Mousebird, see *Urocolius*
Mucus, epithelial, of frog 155:89, 97 (Stith BJ)
–, role in eel intestinal ion exchange 157:295 (Simonneaux V, et al)
–, role in eel oesophageal ion absorption 157:187 (Simonneaux V, et al)
Musca, calcium transport to and deposition in puparial cuticle 158:413 (Krueger RA, et al)
Muscle, anterior byssus retractor, anaerobic energy metabolism in mussel – 159:349 (Zange J, et al)
–, body wall, myosin isoforms in earthworm – 157:171 (D'Haese J, Carlhoff D)
–, cardiac, see myocardium
–, carp myofibrillar proteins 160:23 (Crockford T, Johnston IA)
– cells, transferrin and iron uptake by cultured chick – 158:559 (Sorokin LM, Morgan EH)
–, changes of phosphometabolites and intracellular pH in prawn – 158:223 (Raffin JP, et al)
–, contractile properties of goldfish fin – du-

ring temperature acclimation 157:219 (Heap SP, et al)
contraction in cicada sound production 152A:183 (Young D, Josephson RK)
–, thermal depencence in a lizard 155:541 (Marsh RL, Bennett AF)
electromechanical uncoupling in molluscan – 158:501 (Huddart H, Hill RB)
exercise, glycogenolysis and glycogen resynthesis in shrimp after – 159:753 (Gruschczyk B, Kamp G)
fibre types, ultrastructural and contractile characteristics of perch – 155:685 (Akster HA, et al)
fibers, histo- and biochemistry of bat – 160:183 (Brigham RM, et al)
–, skinned, properties of – in antarctic and warm water marine fishes 155:63 (Johnstone IA, Brill R)
function, thermal adaptations in lizard – 157:241 (John-Alder HB, Bennett AF)
gizzard, slow type myosin in earthworm – 157:589 (Carlhoff D, D'Haese J)
heterogeneity of spider – 157:285 (Maier L, et al)
ionic basis of resting potential of molluscan – 159:305 (Dorsett DA, Evans CG)
obliquely striated, actin-modulating protein from earthworm – 157:615 (D'Haese J, Hinssen H)
oxygen affinity of fish and mammalian myoglobins 159:205 (Nichols JW, Weber LJ)
pectoralis, in migratory birds 158:165 (Lundgren BO, Kiessling K-H)
6-phosphofructokinase in locust flight – 157:315 (Wegener G, et al)
physiology, adaptation to temperature in fish muscle cross bridge mechanisms 156:819 (Altringham JD, Johnston IA)
–, bat pectoralis muscle during hibernation 152:97, 137 (Yacoe ME)
–, contractile performance of amphibian sartorius muscle 151:127 (Renaud JM, Stevens ED)
–, dual reflex motor control of crab muscle receptor 153A:309 (Cannone AJ, Bush BMH)
–, electrophysiology of ctenophore single cells 154:257 (Anderson PAV)
–, eurythermality of fish myofibrils 153:167 (Sidell BD, et al)
–, exercise and lactate metabolism in lizards 160:331 (Gleeson TT, Dalessio PM)
–, histochemistry and electrophysiology of spider leg muscle 157:285 (Maier L, et al)
–, lactate and lactate dehydrogenase in shrimp during temperature changes 154:85 (Thébault MT)
–, neck flexion related activity of pigeon flight control muscle 153A:111 (Bilo D, Bilo A)
–, neuromuscular transmission in crab 152A:411 (Rathmayer W, Erxleben C)
–, peptide and FRMFamide actions on coelenterate contractile system 157:31 (Anctil M)
–, stretch activation in molluscan skinned smooth muscle 154:187 (Gagelmann M, et al)
– –, sturgeon pyruvate kinase 153:247 (Guderley H, et al)
– –, temperature and neuromuscular transmission in a crab 153A:455 (Stephens PJ, Atwood HL)
–, ribbed, adhesive protein of mussel – 159:517 (Waite JH, et al)
–, serotonin modulation of coelenterate peristalsis 159:491 (Anctil M)
–, skeletal, capillarity and diffusion distances in bird – 160:583 (Snyder GK)
–, –, effect of training and inactivation on mouse – 155:51 (Hoppeler H, et al)
–, –, glycogen synthesis from lactate in lizard – 156:277 (Gleeson TT)
–, –, monoamine actions on crab – 154:503 (Huddart H, Battram JC)
–, –, pH dynamics during arousal from hibernation 160:339 (McArthur MD, et al)
–, –, temperature and pH effects on LDH in anuran – 160:105 (Mendiola P, De Costa J)
–, smooth adductor, force maintenance in brachiopod – 157:651 (Wilkens JL)
– smooth, excitation-contraction coupling in molluscan gill – 157:659 (Reilly WM, Peretz B)
–, –, single cells isolated from a ctenophore – 154:257 (Anderson PAV)
–, swimming, helps warm shark brain 157:709 (Wolf NG, et al)
Muscles, aerobic and anaerobic, threshold for shivering in fowl – 158:431 (Aulie A, Tøien Ø)
–, buccal, cerebral ventral giant cell effects on *Philine* – 159:509 (Evans CG, Dorsett DA)
–, neck, in reindeer bucks during rutting season 157:45 (Kiessling K-H, et al)
–, proboscis, response diversity in whelk – 159:717, 727 (Huddart H, et al)
Muscular activity, opine formation in marine invertebrates during – 159:617 (Kreutzer U, et al)
– work, effects on glycolysis in cockles 159:195 (Meinardus-Hager G, et al)
Muskox, see *Ovibos*
Muskrat, see *Ondatra*
Mussel, see *Geukensia*, *Mytilus*
Mutant, *Drosophila* –, sensitive to developmental temperature 151A:483 (Minke B)
Mutants, biological rhythm in *Drosophila* – 151A:545 (Jackson FR, et al)
Myocardial contraction, effects of andrenaline and K^+ on – in trout 159:61 (Hove-Madsen I, Gesser H)
Myocardium, contractility and energy state under inhibition of glycolysis of trout – 160:691 (Hartmund T, Gesser H)
Myoglobin, oxygen affinity of fish and mammalian – 159:205 (Nichols JW, Weber LJ)
Myosin ATPase and temperature acclimation in carp 160:233 (Hwang GC, et al)
– isoforms in earthworm body wall muscle 157:171 (D'Haese J, Carlhoff D)
–, slow type, in earthworm gizzard muscle 157:598 (Carlhoff D, D'Haese J)
Myotis, histo- and biochemistry of muscle fibers 160:183 (Brigham RM, et al)
–, target discrimination during flight 152A:275 (Habersetzer J, Vogler B)
Myoxocephalus, blood viscosity 155:455 (Graham MS, Fletcher GL)
Mytilus, adhesive foam 156:491 (Waite JH)
–, amino acid transport in gill 156:259 (Wright SH)
–, amino acid uptake by gill 154:249 (Wright SH, et al)
–, anaerobic energy metabolism in muscle 159:349 (Zange J, et al)
– anaerobic succinate formation 153:267 (Zwaan A de, et al)
–, stretch activation in skinned smooth muscle 154:187 (Gagelmann M, et al)
Myxine, hormone studies 158:621 (Wales NAM)
–, renal D-glucose transport system 154:355 (Flöge J, et al)

N

Na, see sodium
N-acetyl-D-glucosamine-1-phosphate transferase in brine shrimp 159:777 (Horst MH)
N-acetyltransferase activity in chick pineal glands 159:37 (Binkley S, et al)
Neck flexion, effect on flight control muscle activity in pigeon 153A:111 (Bilo D, Bilo A)
– muscle changes in reindeer bucks during rut 157:45 (Kiessling K-H, et al)
Necturus, renal organic anion transport 154:119 (Khalsa BDS, et al)
Nematoda, see also nematodes
–, 2-methylvalerate formation in *Ascaris* mitochondria 154:349 (Rioux A, Komuniecki R)
–, cold-hardiness in Antarctic *Eudorylaimus* 160:167 (Pickup J)
Nematodes, cold tolerance 154:73 (Wharton DA, et al)
Nemertina, volume regulation in *Procephalothrix* 154:125 (Ferraris JD)
Nephelopsis, fever in – 159:281 (Cabanac M)
Nephridial nerve cell in a leech 152A:455 (Wenning A)
Nereis, volume regulation 154:607 (Dykens JA, Mangum CP)
Nerve, laryngeal, see laryngeal nerve
–, splanchnic, see splanchnic nerve
Nervous control of toad skin permeability 154:573 (Segura ET, et al)
– system, diuretic factors in insect larval – 159:359 (Chung J-S, Keeley LL)
– –, driver potentials in lobster cardiac ganglion neurons 151A:329 (Tazaki K, Cooke IM)
– –, giant interneurones in cockroach abdominal ganglion inhibited by a chordotonal organ 153A:377 (Bernard J, et al)
– –, morphology and response of giant interneurons to sound in bushcricket 151A:449 (Shen J-X)
– –, neurodepressing factor in insect haemolymph 152A:283 (Finlayson LH, et al)
– –, pheromone-triggered interneurons in moth ventral nerve cord 152A:297 (Olberg RM)
– –, topography of crab cardiac ganglion 151A:311 (Tazaki K, Cooke IM)

Nest, see also incubation mound
– building and thermogenesis in house mice 157:39 (Schneider JE, et al)
–, egg temperature and humidity in ostrich – 157:845 (Swart D, Rahn H)
– humidity in bantam hen 156:823 (Andersen Ø, Steen JB)
Neural coding of insect ventilatory movements 153A:543 (Kinnamon SC, Kammer AE)
– stimulation of fly ecdysteroid synthesis 157:543 (Henrich VC, et al)
Neurodepressing factor in insect haemolymph 152A:283 (Finlayson LH, et al)
Neuroendocrine control of hamster thermal adaptation 160:153 (Roth J, et al)
– responses of flies to stress conditions 157:519 (Rauschenbach IYu, et al)
Neuro-ethology of spider vibration sense 152A:361 (Hergenröder R, Barth FG)
Neurohormone D, inactivation by cockroach Malpighian tubules 157:511 (Baumann E, Penzlin H)
– –, structure-function studies on – 160:423 (Baumann E, et al)
Neuromuscular properties, temperature effects on crab – 158:689 (Blundon JA)
– transmission in crab muscle fibers 152A:411 (Rathmayer W, Erxleben C)
Neuron, sensory, associated with leech nephridia 152A:455 (Wenning A)
Neurons, intracellular pH regulation in crayfish – 157:435 (Gaillard S, Rodeau JL)
Neuropeptide, cardioactive, in a snail 154:29 (Geraerts WPM, et al)
–, crustacean, in locust nervous system 159:5 (Stangier J, et al)
Neuropeptides of AKH/RPCH family in Coleoptera 159:589 (Gäde G)
Neurosecretory cell, effect of hyperpolarization on hemolymph composition in *Aplysia* 155:297 (Bablanian GM, Treistman SN)
– influence on volume regulation in intertidal nemertine and oligochaete 154:125 (Ferraris JD)
Neurospora, protein phosphorylation in circadian rhythm 159:695 (Techel D, et al)
Neurotransmission, adrenergic, in coelenterates 155:251 (Carlberg M, Rosengren E)
Newt, see *Notophthalmus*, *Triturus*
Nitrite, effects on carp homeostasis 157:533 (Jensen FB, et al)
–, inhibition of chloride uptake in freshwater teleosts by – 156:867 (Williams EM, Eddy FB)
Nitrogen catabolism in snails 159:115 (Lazaridou-Dimitriadou M, Kaloyianni M)
– excretion and metabolism in willow ptarmigan 155:71 (Mortensen A, Tindall A)
– – in starved fish 156:701 (Pusey BJ)
– metabolism in reed frogs 158:537 (Schmuck R, et al)
– – in water-restricted wallabies 155:759 (Chilcott MJ, et al)
Noradrenaline, role in hamster thermal adaptation 160:153 (Roth J, et al)
Notophthalmus, distribution of leukocytes 153A:(Bennett MF, Daigle KR)
Nucleus isthmi, functional relationship to optic tectum in teleosteans 152A:545 (Williams B, et al)
Nutrient transport in salmon intestine 156:163 (Collie NL)
Nutrition, embryonic, in a blennie 155:437 (Korsgaard B, Østergard Andersen F)
Nyctalus, echolocation 152A:421 (Vogler B, Neuweiler G)

O

Octopamine, effects in *Limulus* hypoosmotic stress 156:481 (Edwards SC, Pierce SK)
–, effects on regulation of JH biosynthesis in cockroach 160:241 (Thompson CS, et al)
Octopus, afferent and efferent components in retina 151A:381 (Patterson JA, Silver SC)
–, atrial peptide effects on systemic heart 158:637 (Agnisola C, et al)
–, effects of pH and CO_2 on hemocyanin 158:547 (Miller KI, Mangum CP)
–, ionic concentrations of body fluid and tissues 156:503 (D-Aniello A, et al)
–, ventilation and circulation during exercise 156:683 (Houlihan DF, et al)
Ocypode, structure and function of hemocyanin 157:501 (Johnson BA)
Oesophagus, role of mucus in ion absorption in eel – 157:187 (Simonneaux V, et al)
Oestradiol, effect on leucin transport in trout intestine 151:247 (Habibi H, et al)
Olfaction, phospholipase C stimulation in insect antennae by pheromones 160:99 (Boeckhoff I, et al)
Olfactory bulb potentials in the carp 152A:319 (Satou M, et al)
– bulbectomy (BX), effects on hamster melatonin levels 158:301 (Pieper DR, et al)
– coding mechanisms in insect receptors 152A:459 (Tichy H, Loftus R)
– discrimination in a fly 152A:373 (Borst A)
Oligochaeta, see also Annelida
–, volume regulation in intertidal – 154:125 (Ferraris JD)
Ommatidium, structural organization in dragonfly ventral compound eye 151A:285 (Armett-Kibel C, Meinertzhagen IA)
Ommochrome synthesis, hormonal effects on – in cabbage armyworm 154:13 (Hiruma K, et al)
Omocestus, song recognition and song pattern 153A:393 (Skovmand O, Pedersen SB)
Oncorhynchus, catecholamine effects on ventilation 160:441 (Kinkead R, Perry SF)
–, cloning of Vt and IT cDNAs 160:601 (Hyodo S, et al)
–, effects of acid and aluminium exposure 160:563 (Witters HE, et al)
–, growth hormone kinetics during sea-water adaptation 160:1 (Sakamoto T, et al)
–, intestinal administration of salmon growth hormone 160:251 (Moriyama S, et al)
–, intestinal nutrient transport 156:163 (Collie NL)
–, myocardium under inhibition of glycolysis 160:691 (Hartmund T, Gesser H)
–, trimethylamine metabolism 158:609 (Charest RP, et al)
Ondatra, CO_2 effects on thermoregulation 156:339 (MacArthur RA)
–, seasonal changes in oxygen storage capacity 160:593 (MacArthur RA)
Ontogeny, see also development
– of response to cold in shrews 159:301 (Nagel A)
– of thermoregulation and energy metabolism in penguin 155:615 (Taylor JRE)
Onychognathus, heat balance 155:395 (Dmi'el R, Tel-Tzur D)
Onymacris, hormonal control of Malpighian tubules 156:407 (Nicolson SW, Hanrahan SA)
Opercular epithelium, role in chloride secretion 154:343 (May SA, et al); 156:183 (May SA, Degnan KJ)
Opiate modulation of quail body temperature 160:699 (Kavaliers M)
Opine formation, control in marine invertebrates 159:617 (Kreutzer U, et al)
Opsanus, solute transport through brush border membranes 157:573 (Wolff NA, et al)
Opsonisation of erythrocytes by ascidian agglutinin 154:509 (Coombe DR, et al)
Optic tectum, functional relationship to nucleus isthmi in teleosteans 152A:545 (Williams B, et al)
– tract, effect on cockroach circadian system 153A:353 (Page TL)
Orconectes, pyridine-sensitive neurons 152A:395 (Hatt H)
–, role of Y-organ and cephalic gland in molt 152:91 (Jegla TC, et al)
Orientation, bat echolocation under clutter interference 152A:447 (McCarty JK, Jen PH-S)
–, compass – vs piloting by familiar landmarks in homing pigeons 153A:55 (Füller E, et al)
–, echolocation behavior in bats 152A:421 (Vogler B, Neuweiler G)
–, interaction of sensory inputs to spider legs 152A:361 (Hergenröder R, Barth FG)
–, landmark learning in bees 151A:521 (Cartwright BA, Collett TS)
–, phonotaxis in crickets 152A:257 (Schmitz B, et al); 153A:509 (Stout JF, et al)
–, solar direction finding in sandhoppers 151A:435 (Scapini F, et al)
–, target discrimination by echolocating bat 152A:275 (Habersetzer J, Vogler B)
Ornithine decarboxylase activity, stimulation by JH during fly vitellogenesis 160:145 (Birnbaum MJ, Gilbert LI)
Ornithodoros, vitellogenin and vitellin 152:13 (Chinzei Y, et al)
–, vitellogenin synthesis 155:671 (Chinzei Y, Ano I)
Orthoptera, auditory fiber projections 151A:389 (Oldfield BP)
Oryctolagus, see also rabbit
–, evaporative water loss 155:433 (Conley KE)
–, heat loss regulation 155:423 (Conley KE, Porter WP)
Oryzias, thermoresistance of inbred strains 160:621 (Kubota Y, Shima A)
Osmolyte effects on fatty acid oxidation in skate liver mitochondria 156:845 (Ballantyne JS, Moon TW)
Osmoreceptors, cephalic, controlling salt gland activity in ducks 154:449 (Gerstberger R, et al)
Osmoregulation, adaptation of flounder rena

function to hypotonic medium 157:21 (Elger E, et al)
-, adrenergic receptors and Cl secretion in a teleost 154:343 (May SA, et al)
-, effects of AII on gull salt and water excretion 158:651 (Gray DA, Erasmus T)
-, effects of angiotensin II on Pekin duck salt glands 156:315 (Gray DA, et al)
-, hyperosmolal effects on amphibian cardiac muscle 154:325 (Hillman SS)
- in burrowed toads 156:735 (Katz U, Gabbay S)
- in dehydrated heat exposed fowl 155:227 (Arad Z, et al)
- in freshwater amphipod 156:323, 331 (Taylor PM, Harris RR); 160:95 (Harris RR, Bayliss D)
-, in *Nereis* 154:607 (Dykens JA, Mangum CP)
-, ion and water transport in seawater eel intestine 155:311 (Ando M)
-, isosmotic secretion in avian salt gland 156:213 (Marshall AT, et al)
-, kidney osmolytes of xeric and mesic rodents 158:369 (Yancey PH)
-, membrane permeability of amphibian and cephalopod lenses 154:333 (Jacob TJC, Duncan G)
-, potassium transport in insect integument 153:147 (Cornell JC, Jungreis AM)
-, response of alkaline phosphatase in trout during – 157:469 (Gasser KW, Kirschner LB)
-, role of antidiuretic hormone in dog and duck 151:241 (Gray DA, Simon E)
-, role of octopamine in horseshoe crab during hypoosmotic stress 156:481 (Edwards SC, Pierce SK)
-, salt and water transport in mosquito Malpighian tubules 154:301 (Williams Jr JC, Beyenbach KW)
-, salt intake and arterial pressure in ducks 160:127 (Brummermann M, Simon E)
-, seasonal changes in arctic charr sea-water tolerance 159:381 (Finstad B, et al)
-, secretion by sea turtle salt glands 157:821 (Marshall AT, Cooper PD)
-, structure and functions of eel intestinal folds 158:45 (Simonneaux V, et al)
-, transepithelial voltage of crab gills 157:345 (Drews G, Graszynski K)
-, volume regulation in intertidal nemertine and oligochaete 154:125 (Ferraris JD)
-, water relations in terrestrial isopods 151:155 (Quinlan MC, Hadley NF)
Osmoregulatory hormones in ducks during electrolyte imbalance 158:9 (Erbe K-H, et al)
Osmotic balance and pituitary function in fowl 156:103 (Hall TR, et al)
- changes after acid and aluminium exposure in trout 160:563 (Witters HE, et al)
- response of salmon louse 155:357 (Hahnenkamp L, Fyhn HJ)
- responses of dogfish rectal gland slices 154:561 (Kleinzeller A, Goldstein J)
- stimuli and hormone release in domestic fowl 156:399 (Arad Z, et al)
- water permeability of fish gills 154:1 (Ogasawara T, Hirano T)
Ostrich, see *Struthio*
Otala, acid-base regulation 156:347 (Barnhart MC)
Ouabain binding to trout hepatocytes 160:93 (Bianchini L, et al)
- -insensitive ion movement and cyclic AMP in shark rectal gland 154:139 (Silva P, et al)
Ovibos, oxygen transport in blood 159:655 (Brix O, et al)
Oviposition, effects of pheromone disinhibition in queen fire ants 467 (Fletcher DJC, Blum MS)
Owl eyes, optical properties 151 A:277 (Murphy CJ, Howland HC)
Oxidative stress, enzymatic adaptation of toad tissues to – 158:583 (Barja de Quiroga G, et al)
Oxygen affinity, adrenergic regulation of trout blood – 152:67 (Nikinmaa M)
- –, allosteric effectors modulating – of carp hemoglobin 159:255 (Wurm Th, Albers C)
- - of crayfish haemocyanin, effects of purine bases on – 156:431 (Morris S, et al)
- - of fish and mammalian myoglobins 159:205 (Nichols JW, Weber LJ)
- binding, effects of NaCl and CO_2on *Artemia* hemoglobin – 156:355 (Davis BJ, Riggs AF)
- - properties of high altitude camelid blood 158:469 (Jürgens KD, et al)
- –, temperature effects on – by amphipod haemocyanin 160:195 (Spicer JI, McMahon BR)
- consumption, daily cycle in week-old rats 159:569 (Mumm B, et al)
- –, effect of training and inactivation on mouse – 155:51 (Hoppeler H, et al)
- –, effects of erythrocythemia on toad – 155:577 (Hillmann SS, et al)
- –, effects of temperature on perch – 157:771 (Gehrke PC, Fielder DR)
- - in a parrot 155:269 (Bucher TL)
- - in desert beetles 155:155 (Bartholomew GA, et al)
- - in finches at low and high altitude 158:57 (Clemens DT)
- - in starved fish 156:701 (Pusey BJ)
- - of fish heart after acute temperature transition 160:511 (Sephton D, et al)
- - of insect recta 153:223 (Sell D, Houlihan DF)
- - of seals during submerged swimming 160:637 (Williams TM, et al)
- - rates, seasonal, in harvester ants 155:399 (MacKay WP, Sassaman CA)
- –, regulation in crayfish 155:43 (Massabuau JC, Burtin B)
- –, temperature and size effects on routine rate of – in larval fish 155:791 (Wieser W, Forstner H)
- –, temperature effects on – in geckos 159:1 (AL-Sadoon MK, Abdo NM)
- content of red cells in eel during hypercapnia 159:687 (Hyde DA, Perry SF)
- detoxifying enzymes in thiobiotic and oxybiotic meiofauna 158:335 (Morrill AC, et al)
–, dissolved, cardio-respiratory responses of perch to – 157:771 (Gehrke PC, Fielder DR)
–, effects on mealmoth eyes 158:421 (Weyrauther E)
- equilibria of bivalve intracellular hemoglobins 156:675 (Grinich NP, et al)
- storage capacity, seasonal changes in muskrat – 160:593 (MacArthur RA)
- transfer by red blood cells in high-altitude camelids and goat 157:1 (Yamaguchi K, et al)
- transport by crab blood 155:733 (Taylor AC, et al)
- - by crab haemocyanin 157:873 (Morris S, et al)
- - by sparrow blood 155:277 (Maginniss LA)
- - in blood of arctic mammals 159:655 (Brix O, et al)
- - in sea turtle 154:275 (Wood SC, et al)
- –, role of β-adrenergic responses in fish blood 154:365 (Nikinmaa M, et al)
- uptake, effects of hypercapnia in trout 151:185 (Thomas S, et al)
- - in arachnid book lungs 159:409 (Paul R, et al)
Oxygenation, three-state MWC analysis of – in fish hemoglobin 160:407 (Jensen FB, et al)

P

Pachygrapsus, temperature and neuromuscular physiology 153 A:455 (Stephens PJ, Atwood HL)
Pacifastacus, exocytosis of prophenoloxidase system 156:175 (Johansson MW, Söderhäll K)
–, tyrosine hydroxylase activity in CNS 155:603 (Laxmyr L.)
Palaemon, lactate and lactate dehydrogenase activity in abdominal muscle 154:85 (Thébault MT)
–, muscle fatigue studied by ^{31}P-NMR 158:223 (Raffin JP, et al)
Palaemonetes, AMP as chemoattractant 153 A:47 (Carr WES, Thompson HW)
Pancreatic A and B cell stimulation in euthermic and hibernating marmots 156:309 (Florant GL, et al)
Pandinus, function of book lung 159:409 (Paul R, et al), 419 (Paul R, Fincke T), 433 (Fincke T, Paul R)
Panting in dehydrated desert iguana 156:377 (Dupré RK, Crawford EC)
Pantophthalmus, endothermy and energy metabolism 156:461 (Bartholomew GA, Lighton JRB)
Pantopoda, ecdysteroids from *Pycnogonum* 156:759 (Bückmann D, et al)
Panulirus, neurohormone action on heart under load 158:403 (Kuramoto T, Ebara A)
Papilio, inhibition in the retina 152 A:169 (Matić T)
Paralabrax, trimethylamine metabolism 158:609 (Charest RP, et al)
Paramecium, ciliary reversal 152 A:385 (Hildebrand E, Dryl S)
–, heat responses 153 A:39 (Hennessey TM, et al)
–, L-glutamic acid binding site on cilia 158:345 (Preston RR, Usherwood PNR)

Parasite regulation of host insect metamorphosis 155:235, 583, 645 (Jones D)
Parrot, see *Agapornis*, *Amazona*
Parus, metabolic rate and energy expenditure 154:23 (Reinertsen RE, Haftorn S)
–, metabolic strategies for nocturnal survival 156:655 (Reinertsen RE, Haftorn S)
–, nocturnal hypothermia and metabolism 151:109 (Reinertsen RE, Haftorn S)
Passer, blood oxygen transport 155:277 (Maginniss LA)
–, control of excretory water loss during dehydration 158:353 (Goldstein DL, Braun EJ)
Patella, anaerobiosis of foot muscle 158:771 (Lazou A, et al)
–, pyruvate kinase modification during anaerobiosis 160:529 (Gaitanaki C, et al)
Pattern generator, pyloric, in lobster 153A:17 (Rezer E, Moulins M)
Pekin duck, see duck
Penaeus, gastrin/cholecystokinin-like peptides in haemolymph 159:269 (Van Wormhoudt A, et al)
Penguin, see *Aptenodytes*, *Eudyptula*, *Pygoscelis*
Peptide, atrial natriuretic, in eel heart 160:119 (Takei Y, et al)
– induced phagocytosis in amoeba 159:287 (Prusch RD, Vedovatti PA)
–, neurohormone D inactivation by cockroach Malpighian tubules 157:511 (Baumann E, Penzlin H)
Peptides, atrial, effects on octopus systemic heart 158:637 (Agnisola C, et al)
–, calcium-binding, from mollusc shell 157:717 (Cariolou MA, Morse DE)
–, FMRFamide actions on coelenterate contractile system 157:31 (Anctil M)
–, gastrin/cholecystokinin-like, in penaeid haemolymph 159:269 (Van Wormhoudt A, et al)
– in *Aplysia* atrial gland 154:435 (Kelner KL, et al); 156:43 (Nagle GT, et al)
– in crab sinus gland 153:191 (Stuenkel EL)
–, structure-function studies on neurohormone D 160:423 (Baumann E, et al)
Peptigergic regulation of ion transport in fish gills 155:471 (Davis MS, Shuttleworth TJ)
Perca, electrophysiology of nucleus isthmi 152A:545 (Williams B, et al)
–, muscle fibre types 155:685 (Akster HA, et al)
Perch, see *Leiopotherapon*, *Perca*
Periostracum, brain effect on in vitro formation 155:177 (Kunigelis SC, Saleuddin ASM)
Periplaneta, chordotonal organ inhibits giant interneurones 153A:377 (Bernard J, et al)
–, cuticular water barrier 159:739 (Machin J, Lampert GJ)
–, inositol-triphosphate formation in antennae 160:99 (Boeckhoff I, et al)
–, Malpighian tubules and neurohormone inactivation 157:511 (Baumann E, Penzlin H)
–, pyruvate kinase isozymes 155:339 (Storey KB)
–, rectal oxygen consumption 153:223 (Sell D, Houlihan DF)
–, sex pheromone components 152A:309 (Sass H)
–, structure-function studies on neurohormone D 160:423 (Baumann E, et al)
–, trehalase purification 155:553 (Ogiso M, et al)
Peromyscus, daily torpor 154:233 (Tannenbaum MG, Pivorun EB)
–, effects of temperature and altitude on respiration 155:751 (Chappell MA)
–, effects of wind thermoregulation and energy balance 154:619 (Chappell MA, Holsclaw III DS)
–, evaporative water loss 155:433 (Conley KE)
–, heat loss regulation 155:423 (Conley KE, Porter WP)
–, intracellular pH during torpor 159:661 (Nestler JR)
Pertussis toxin, inhibition of melatonin action in frogs by – 157:153 (White BH, et al)
Petauroides, digestion and metabolism of eucalypt foliage 157:355 (Foley WJ)
–, heat balance 154:105 (Rübsamen K, et al)
Petromyzon, catecholamines 152:35 (Dashow L, Epple A)
–, electroreceptors 152A:209 (Bodznik D, Preston DG)
–, iron metabolism 157:731 (Youson JH, et al)
pH effects on anuran muscle LDH 160:105 (Mendiola P, De Costa J)
pH regulation in crayfish neurons 157:435 (Gaillard S, Rodau JL)
pH -temperature interactions on a protein and hibernation in hamster 158:487 (Malan A, Mioskowski E)
Phagocytosis, peptide induced, and calcium movements in amoeba 159:287 (Prusch RD, Vedovatti PA)
Phalacrocorax, bradycardia during dive 154:243 (Mangalam HJ, Jones DR)
–, convection and thermoregulation 159:313 (Chappell MA, et al)
Phascolarctos, digestion 152:43 (Cork SJ, Warner ACI), 131 (Cork SJ, Hume ID); 153:181 (Cork SJ, et al)
Phenoloxydase, role in hornworm melanization 155:659 (Hiruma K, et al)
Phenylalanine transport in cockroach midgut 156:549 (Parenti P, et al)
Pheromone components of female cockroach 152A:309 (Sass H)
–, inhibitory, in queen fire ant 153A:467 (Fletcher DJC, Blum MS)
Pheromones, phospholipase C in insect antennae stimulated by – 160:99 (Boeckhoff I, et al)
Pheromone-triggered interneurons in moth ventral nerve cord 152A:297 (Olberg RM)
Philine, muscle potentials 159:305 (Dorsett DA, Evans CG), 509 (Evans CG, Dorsett DA)
Phoca, cardiac output and stroke volume during swimming 160:473 (Ponganis PJ, et al)
–, fuel homeostasis during submerged swimming 160:627 (Davis RW, et al)
–, heart rate and oxygen consumption during swimming 160:637 (Williams TM, et al)
–, lactate and glucose metabolism 153:275 (Davis RW)
Phodopus, see also Djungarian hamster, hamster
–, cold-adaptation and brown adipose tissue 155:717 (Rafael J, et al)
–, daily torpor 160:609 (Ruf T, et al)
–, plasma free fatty acids during thermogenesis 155:679 (Heldmaier G, Seidl K)
–, seasonal adaptation of brown adipose tissue 155:521 (Rafael J, et al)
Phonotaxis, attractiveness of cricket male calling song 153A:509 (Stout JF, et al)
– in crickets after ear occlusion 152A:257 (Schmitz B, et al)
Phosphagen depletion, effects on spider maximal activity 158:449 (Prestwich KN)
Phosphate, inorganic, distribution in estradiol treated trout 155:347 (Björnsson BT, Haux C)
– transport, renal, in freshwater turtle 152:117 (Laverty G)
Phosphatidylinositol, effects on insect ice nucleator activity 159:71 (Neven LG, et al)
Phosphoenolpyruvate carboxykinase, role in mussel anaerobic metabolism 153:267 (Zwaan A de, et al)
Phosphofructokinase in locust flight muscle 157:315 (Wegener G, et al)
–, kinetics in anoxic worms 160:201 (Michaelidis B, et al)
Phospholipase A_2, purification and kinetics of trout – 155:461 (Neas NP, Hazel JR)
Phospholipase C in insect antennae, stimulation by pheromones 160:99 (Boeckhoff I, et al)
Phospholipid composition of trout gill, thermal adaptation 155:597 (Hazel RJ, Carpenter R)
– molecular species, effect of temperature on – 156:665 (Hazel JR, Zerba E)
Phosphometabolites in prawn tail muscle 158:223 (Raffin JP, et al)
Phosphorus metabolism in turtle embryos 159:501 (Packard MJ, Packard GC)
–, mobilization by blackbird embryos 160:649 (Packard MJ, Packard GC)
– NMR spectroscopy of skeletal muscle pH dynamics 160:339 (McArthur MD, et al)
– nuclear magnetite resonance (P-NMR) studies in prawn tail muscle 158:223 (Raffin JP, et al)
Photoperiod, effect on quail thermoregulation 157:625 (Saarela S, Heldmaier G)
Photoperiodic induction of pupal diapause in fleshfly 154:91 (Gnagey AL, Denlinger DL)
– mimetic, thyroxine as – in quails 157:829 (Follett BK, et al), 837 (Follett BK, Nicholls TJ)
Photophase, effect on marsupial daily torpor 156:129 (Geiser F, Baudinette RV)
Photoreceptors, $InsP_3$ metabolism in squid – 160:293 (Wood SF, et al)
–, synapses in bee – after chromatic deprivation 151A:477 (Hertel H)
Phragmatopoma, silk-like bioadhesive of tubes 158:317 (Jensen RA, Morse DE)
Phyllomedusa, gas exchange and evaporative water loss 157:423 (Stinner JN, Showmaker VH)
Phylogeny of vertebrate brain gangliosides 151:215 (Rahmann H, Hilbig R)
Physiological correlates of activity in lizards 154:113 (Bennett AF, et al)

Pigeon, see also *Columba*
–, compass orientation 153 A: 55 (Füller E, et al)
–, crop milk proteins 154: 237 (Horseman ND, Will CL)
–, flight in a wind tunnel 157: 91 (Rothe H-J, Nachtigall W), 99 (Rothe H-J, et al), 111 (Hirth K-D, et al), 117 (Biesel W, Nachtigall W)
–, neck flexion and flight control muscle activity 153 A: 111 (Bilo D, Bilo A)
–, seasonal variation of ptiloerection and shivering 154: 47 (Saarela S, et al)
–, vibrational sensitivity 152 A: 251 (Shen J-X)
Pigment migration, effects on – in mealmoth eyes 158: 421 (Weyrauther E)
–, spectral sensitivity of – in moth eye 153 A: 59 (White RH, et al)
Pigment, red, concentrating hormone in 6 crustacean species 160: 373 (Gaus G, et al)
Pigments, developmental changes of amount in locust epidermis 154: 549 (Bouthier A, Lhonoré J)
–, excretion of biliverdin and bilirubin in bile of skates 157: 61 (Grossbard ML, et al)
Pike, see *Esox*
Pineal eye, functioning in newt embryos 152 A: 529 (Roberts A, Clarke JDW)
– gland, loss of SNAT activity in chicken – 159: 583 (Rodriguez-Cabello JC, et al)
–, N-acetyltransferase activity in chicken – 159: 37 (Binkley S, et al)
Pinealectomy, effect on finch activity rhythms 153 A: 413 (Fuchs JL)
–, effect on lizard thermoregulatory behavior 159: 13 (Firth BT, et al)
Pipa, pH and ATP effects on hemoglobin 155: 353 (Lima AAB, et al)
Pisces, acclimational responses to hypoxia – hypercapnia in *Tinca* 156: 197, 205 (Jensen FB, Weber RE)
–, acid-base and ionoregulation in *Catostomus* 154: 35, 329 (Höbe H, et al); 158: 67 (Höbe H, McMahon BR)
–, acid-base status after exercise in *Hemitripterus* 156: 583 (Milligan CL, Farrell TP)
–, ADP-ribosyltransferase from *Salmo* 157: 567 (Burtscher HJ, et al)
–, adrenergic blockade and gas exchange in *Scyliorhinus* 158: 39 (Metcalfe JD, Butler PJ)
–, adrenergic receptors and Cl secretion in *Fundulus* 154: 343 (May SA, et al)
–, aerial ventilation in *Channa* 156: 425 (Glass ML, et al)
–, aldehyde dehydrogenase and alcohol dehydrogenase in *Carassius* 158: 479 (Nilsson GE)
–, alkaline phosphatase and osmoregulation in *Salmo* 157: 469 (Gasser KW, Kirschner LB)
–, allosteric effectors and hemoglobin oxygen affinity in *Cyprinus* 159: 255 (Wurm TH, Albers C)
–, allosteric transitions in *Tinca* hemoglobin 157: 145 (Weber RE, et al)
–, AMP deaminase of *Salmo* gill 154: 55 (Raffin J-P)
–, amylase gene-enzyme system of *Gambusia* 159: 237 (Yardley DG)
–, anaerobic metabolism of goldfish 159: 263 (Waversveld J van, et al)
–, antifreeze polypeptides from *Macrozoarces* 155: 81 (Hew CL, et al)
–, ascorbate absorption and metabolism in *Cyprinus* 160: 549 (Dabrowski K)
–, atrial natriuretic peptide in *Anguilla* heart 160: 119 (Takei Y, et al)
–, beta-adrenergic control of *Salmo* blood oxygen affinity 157: 667 (Tetens V, Christensen NJ)
–, binding properties of A_1 adenosine receptors in *Sebastolobus* 157: 267 (Murray TF, Siebenaller JF)
–, blood acid-base balance in the trout 152: 53 (Thomas S)
–, blood oxygen affinity in *Salmo* 152: 67 (Nikinmaa M)
–, blood oxygen transport in *Morone* 154: 365 (Nikinmaa M, et al)
–, blood viscosity of two cold water, marine sculpins 155: 455 (Graham MS, Fletcher GL)
–, brain and eye temperatures in sharks 156: 229 (Block BA, Carey FG)
–, branchial chloride transport in *Salmo* 154: 269 (Perry SF, et al)
–, carbohydrate metabolism in *Carassius* 154: 477 (Thillart G van den, Smit H)
–, carbonic anhydrase in hypercapnic *Salmo* 157: 405 (Dimberg K, Höglund LB)
–, cardiac effects of *Anguilla* neurohypophysial hormones 160: 213 (Chiu KW, Lee YC)
–, cardiac energy metabolism of teleost and elasmobranch hearts 154: 593 (Driedzic WR, Hart T)
–, cardiac function in *Triakis* 160: 259 (Lai NC, et al)
–, cardiac stress responses in *Platichthys* 159: 105 (Lennard R, Huddart H)
–, cardio-respiratory responses of *Leiopotherapon* 157: 771 (Gehrke PC, Fielder DR)
–, cardiovascular control during hypoxia in *Gadus* 160: 287 (Fritsche R, Nilsson S)
–, catecholamine effects on *Oncorhynchus* ventilation 160: 441 (Kinkead R, Perry SF)
–, catecholamine release from *Gadus* spleen 160: 401 (Ehrenström F, Ungell A-L)
–, catecholamine uptake in *Gadus* swimbladder 155: 479 (Ungell A-L)
–, catecholamines in *Anguilla* 155: 285 (Epple A, Nibbio B); 157: 327 (Bennett MB, Rankin JC)
–, changes in osmotic water permeability of *Anguilla* gills 154: 1 (Ogasawara T, Hirano T)
–, chloride fluxes in *Squalus* rectal gland 155: 415 (Hannafin JA, Kinne R)
–, cloning of *Oncorhynchus* Vt and IT cDNAs 160: 601 (Hyodo S, et al)
–, diencephalic electrosensory nuclei in *Platyrhinoidis* 153 A: 331 (Schweitzer J)
–, disposition of *Salmo* alkaline phosphatase 157: 461 (Gasser KW, Kirschner LB)
–, dopamine and thermoregulation in *Carassius* 159: 83 (Wollmuth LP, et al)
–, effect of acclimation temperature on protein synthesis in *Salmo* tissues 157: 201 (Simon E)
–, effect of anisotonic media on *Squalus* rectal gland slices 154: 561 (Kleinzeller A, Goldstein J)
–, effect of contraction frequency on teleost hearts 156: 135 (Driedzic WR, Gesser H)
–, effects of acid and aluminium exposure in *Oncorhynchus* 160: 563 (Whitters HE, et al)
–, effects of air-exposure in eel 157: 635 (Hyde DA, et al)
–, effects of anoxia and $[Ca^{2+}]_o$ on *Salmo* heart muscle 154: 523 (Nielsen KE, Gesser H)
–, effects of copper on *Salmo* branchial ionoregulation 155: 635 (Laurén DJ, McDonald DG)
–, effects of nitrite on *Cyprinus* homeostasis 157: 533 (Jensen FB, et al)
–, effects of prostacyclin on *Conger* in vitro heart 160: 365 (Acierno R, et al)
–, effects of starvation in *Lepidogalaxias* 156: 701 (Pusey BJ)
–, electrolytes and water in *Squalus* rectal gland 155: 145 (Kleinzeller A, et al)
–, electrophysiology of teleostean nucleus isthmi 152 A: 545 (Williams B, et al)
–, electroreceptor tuning in *Sternopygus* 153 A: 477 (Zakon HH, Meyer JH)
–, embryonic nutrition, growth and energetics in *Zoarces* 155: 437 (Korsgaard B, Østergaard Andersen F)
–, energy metabolism of swimming *Salmo* 156: 511 (Van den Thillart G)
–, energy production in young *Salmo* 155: 485 (Wieser W, et al)
–, energy reserves of *Gadus* during starvation and refeeding 156: 469 (Black D, Love RM)
–, estradiol effects on ion distribution in *Salmo* 155: 347 (Björnsson BT, Haux C)
–, eurythermality of *Fundulus* myofibrils 153: 167 (Sidell BD, et al)
–, evolutionary adaptation to temperature in muscle cross bridge mechanisms 156: 819 (Altringham JD, Johnston IA)
–, excretion of bile pigments in *Raja* 157: 61 (Grossbard ML, et al)
–, exercise and adreneric effects in *Tinca* 157: 51 (Jensen FB)
–, exercise metabolism in *Esox* 156: 67 (Schwalme K, Mackay WC)
–, force frequency in *Salmo* myocardium 159: 61 (Hove-Madsen I, Gesser H)
–, gas secretion and resorption in *Gadus* swimbladder 155: 319 (Harden Jones FR, Scholes P)
–, gen transfer to *Salmo* eggs 158: 751 (Rokkones E, et al)
–, GH kinetics in *Oncorhynchus* during SW adaptation 160: 1 (Sakamoto T, et al)
–, gill water boundary layer in *Salmo* 158: 627 (Wright PA, et al)
–, gill water chemistry in *Salmo* 159: 527, 539 (Playle RC, Wood CM)
–, glomerular intermittency in *Carassius* 154: 225 (Elger M, et al)
–, glycolytic control in anoxic *Carassius* 157: 813 (Rahman MS, Storey KB)
–, gustatory responses of *Salmo* to amino acids 153 A: 423 (Marui T, et al)
–, gustatory specificity in *Cyprinus* 153 A: 299 (Marui T, et al)
–, heart energy metabolism in *Hemitripterus* 160: 511 (Sephton D, et al)

Pisces, hypercapnia and catecholamines in *Salmo* 158:107 (Vermette MG, Perry SF)
–, hypercapnia in *Anguilla* 159:687 (Hyde DA, Perry SF)
–, hypercapnia in *Salmo* 151:185 (Thomas S, et al)
–, inhibition of chloride uptake by nitrite in freshwater teleosts 156:867 (Williams EM, Eddy FB)
–, inhibition of Cl secretion in *Fundulus* opercular epithelium 156:183 (May SA, Degnan KJ)
–, interactions of surfactants in *Salmo* gills 157:429 (Stagg RM, Shuttleworth TJ)
–, intestinal amino acid transport in *Salmo* 157:161 (Bell JG, et al)
–, intestinal glucose absorption in *Salmo* and *Cyprinus* 157:677 (Buddington RK)
–, intestinal mucus and ion transport in *Anguilla* 157:295 (Simonneaux V, et al)
–, intestinal nutrient transport in *Oncorhynchus* 156:163 (Collie NL)
–, intestinal sugar transport 151:163 (Groot JA, et al); 152:79 (Ferraris RP, Ahearn GA)
–, intestinal transport in temperature-acclimated *Carassius* 151:163 (Groot JA, et al)
–, ion and water transport in *Anguilla* intestine 155:311 (Ando M)
–, ion exchange in *Squalus* renal brush border membranes 159:339 (Bevan C, et al)
–, ion transport in *Platichthys* isolated gills 155:471 (Davis MS, Shuttleworth TJ)
–, ionic movements across chorion in *Salmon* eggs 159:771 (Eddy FB, et al)
–, ionic regulation by *Salmo* eggs 159:249 (Shephard KL, McWilliams PG)
–, lipid transport in *Salmo* 156:497 (Black D, Skinner R)
–, luminal alkalinization in *Gillichthys* intestine 156:803 (Dixon JM, Loretz CA)
–, lysophosphatidylcholine acetyltransferase in *Salmo* liver 158:363 (Livermore RC, Hazel JR)
–, membrane adaptation in *Salmo* 156:35 (Hagar AF, Hazel JR)
–, metabolism of *Salmo* gills 154:191 (Mommsen TP)
–, muscle fibre types of *Perca* 155:685 (Akster HA, et al)
–, muscle pyruvate kinase in *Acipenser* 153:247 (Guderley H, et al)
–, myocardium of *Oncorhynchus* under inhibition of glycolysis 160:691 (Hartmund T, Gesser H)
–, myofibrillar proteins in *Cyprinus* 160:23 (Crockford T, Johnston IA)
–, myoglobin oxygen affinity in fish 159:205 (Nichols JW, Weber LJ)
–, myosin and temperature acclimation in *Cyprinus* 160:233 (Hwang GC, et al)
–, oesophageal mucus as a diffusion barrier in *Anguilla* 157:187 (Simonneaux V, et al)
–, olfactory bulb potentials in *Cyprinus* 152A:319 (Satou M, et al)
–, osmolyte effects on fatty acid oxidation in *Raja* liver mitochondria 156:845 (Ballantyne JS, Moon TW)
–, osmoregulatory functions of *Anguilla* intestinal folds 158:45 (Simonneaux V, et al)
–, ouabain binding to *Salmo* hepatocytes 160:93 (Bianchini L, et al)
–, ouabain-insensitive ion movement in *Squalus* rectal gland 154:139 (Silva P, et al)
–, phospholipase A_2 in *Salmo* 155:461 (Neas NP, Hazel JR)
–, plasma ionic composition and erythrocytes in deep sea fish 155:629 (Shelton C, et al)
–, pressure adaptation of *Sebastolobus* dehydrogenases 154:443 (Siebenaller JF)
–, pressure adaptation of teleost gill Na^+/K^+-ATPase 160:431 (Gibbs A, Somero GN)
–, pressure inactivation of lactate dehydrogenases in deep-living fishes 155:647 (Hennessy Jr JP, Siebenaller JF)
–, prolactin effect on thyroid function in *Anguilla* 154:199 (de Luze A, et al)
–, protein synthesis and thermotolerance in *Salmo* cells 158:457 (Mosser DD, Bols NC)
–, renal adaptation to hypotonic medium in *Pseudopleuronectes* 157:21 (Elger E, et al)
–, respiratory effects of decreased salinity in *Salmo* 160:31 (Maxime V, et al)
–, salmon growth hormone effects in *Oncorhynchus* 160:251 (Moriyama S, et al)
–, seasonal changes in *Salvelinus* sea-water tolerance 159:381 (Finstad B, et al)
–, sensory gating by corollary discharge in electric fish 151A:401 (Meyer JH, Bell CC)
–, skinned muscle fibres in antarctic and warm water marine fishes 155:63 (Johnston IA, Brill R)
–, sodium balance in acid tolerant *Enneacanthus* and *Lepomis* 157:555 (Gonzalez RJ, Dunson WA)
–, sodium uptake in *Salmo* intestine 159:275 (Aguenaou H, et al)
–, solute transport through brush border membranes in *Opsanus* 157:573 (Wolff NA, et al)
–, steroids and discharge frequency in *Sternopygus* 153A:29 (Meyer JH)
–, steroids and leucin transport in *Salmo* 151:247 (Habibi H, et al)
–, sulfide detoxification by *Fundulus* and *Citharichthys* mitochondria 160:519 (Bagarinao T, Vetter RD)
–, surfactant effects on *Platichthys* gill adrenergic responses 156:727 (Stagg RM, Shuttleworth TJ)
–, swimming activity and metabolic rates in *Rutilus* 160:71 (Forstner H, Wieser W)
–, swimming muscle warms the brain of lamnid sharks 157:709 (Wolf NG, et al)
–, taurine transport by brush border membrane vesicles in *Pseudopleuronectes* 155:185 (King PA, et al)
–, tectal visual responses in *Tribolodon* 152A:147 (Kawasaki M, Aoki K)
–, temperature acclimation and *Carassius* muscle contraction 157:219 (Heap SP, et al)
–, temperature and phospholipid molecular species in *Salmo* liver tissue membranes 156:665 (Hazel JR, Zerba E)
–, temperature and size effects on cyprinid oxygen consumption 156:791 (Wieser W, Forstner H)
–, thermal effects on phospholipid composition in *Salmo* gill 155:597 (Hazel JR, Carpenter R)
–, thermodynamics in *Tinca* hemoglobin 157:137 (Jensen FB, Weber RE)
–, thermoresistance of *Oryzias* inbred strains 160:621 (Kubota Y, Shima A)
–, three-state MWC analysis of *Tinca* hemoglobin oxygenation 160:407 (Jensen FB, et al)
–, tissue hypertrophy during *Ictalurus* and *Lepomis* cold acclimation 158:185 (Kent J, et al)
–, transferrin-receptor interactions 157:363 (Lim BC, et al)
–, transport and activity of orally administered GtH in *Carassius* 157:753 (Suzuki Y, et al)
–, trimethylamine metabolism in *Paralabrax* and *Oncorhynchus* 158:609 (Charest RP, et al)
–, VIP in *Gadus* swimbladder 154:627 (Lundin K, Holmgren S)
–, water carbonate alkalinity effects on *Salmo* blood acid-base status 156:29 (Thomas S, Poupin J)
–, zinc-induced blood parameters in *Salmo* 154:149 (Spry DJ, Wood CM)
Pituophis, gas exchange and air flow in lung 157:307 (Stinner JN)
Planaria, oxygen detoxifying enzymes in – 158:335 (Morrill AC, et al)
Plasma coagulogen (PC) of a cockroach 155:135 (Barwig B)
– fuels, changes during natural breeding fast in penguins 156:521 (Groscolas R)
– osmolality and panting thresholds in dehydrated iguana 156:377 (Dupré RK, Crawford EC)
Platichthys, cardiac stress responses 159:105 (Lennard R, Huddart H)
–, ion transport in isolated gills 155:471 (Davis MS, Shuttleworth TJ)
–, surfactant effects on gill adrenergic responses 156:727 (Stagg RM, Shuttleworth TJ)
Platyrhinoidis, diencephalic electrosensory nuclei 153A:331 (Schweitzer J)
Pleurobranchaea, diversity of cerebral ganglia neurons 153A:533 (McClellan AD)
Ploceidae, tropical, hormones, reproduction and moult in – 156:641 (Dittami JP)
Podarcis, supercooling and freeze-tolerance 160:137 (Claussen DL, et al)
Podocytes of bivalve molluscs, evidence for ultrafiltration 156:151 (Meyhöfer E, et al)
Pogonomyrmex, paradoxical acclimation and oxygen consumption rates 154:399 (MacKay WP, Sassaman CA)
Poikilothermy in young house martins 159:379 (Steen JB, et al)
Polarization pattern of crustacean retinula cells 153A:435 (Stowe S)
Pollimyrus, sensory gating by corollary discharge 151A:401 (Meyer JH, Bell CC)
Polychaeta, see *Glycera*, *Phragmatopoma*
Polyol synthesis by insect larvae under aerobiosis and anoxia 160:77 (Storey JM, Storey KB)
Polyorchis, dopamine in tissues 159:173 (Chung JM, et al)
Polypeptides, antifreeze, from Newfoundland ocean pout 155:81 (Hew CL, et al)
Popillia, glutamate dehydrogenase isozymes 151:199 (Male KB, Storey KB)

Porcellio, water relations 151:155 (Quinlan MC, Hadley NF)
Porcellionides, water relations 151:155 (Quinlan MC, Hadley NF)
Porcupine, see *Erithrizon*
Portunus, cardiac ganglion topography 151 A:311 (Tazaki K, Cooke IM)
Possum, see *Trichosurus*
Potassium, effect on force frequency in trout myocardium 159:61 (Hove-Madsen I, Gesser H)
- effects on dogfish rectal gland slices 155:145 (Kleinzeller A, et al)
- transport across fowl intestines 160:17 (Grubb BR, Bentley PJ)
- - in tobacco hornworm integument 153:147 (Cornell JC, Jungreis AM)
Pout, see *Macrozoarces*
Power requirements of flying pigeon 157:99 (Rothe H-J, et al)
Pressure adaptation of teleost gill Na^+/K^+-ATPase 160:431 (Gibbs A, Somero GN)
- adaptations of dehydrogenases of congeneric fish 154:443 (Siebenaller JF)
-, hydrostatic, and lactate dehydrogenases in deep living fish 155:647 (Hennessey Jr JP, Siebenaller JF)
Prey-catching behavior in salamander 153 A:85 (Finkenstädt T, Ewert J-P)
Proboscis muscles, mechanical responses in whelk – 159:717, 727 (Huddart H, et al)
Procambarus, local interneurons mediating lateral inhibition 151 A:261 (Reichert H, et al)
-, presynaptic inhibition of afferents 153 A:443 (Fricke RA, Kennedy D)
-, serial order of escape behavior 153 A:3 (Reichert H, Wine JJ)
-, spikeless interaction of motoneurons 152 A:335 (Nagayama T, et al)
Procephalothrix, volume regulation 154:125 (Ferraris JD)
Prolactin and osmotic balance in fowl 156:103 (Hall TR, et al)
- binding in toad brain and kidney 155:611 (Lüthy IA, et al)
-, effect on pigeon crop milk proteins 154:237 (Horseman ND, Will CL)
-, effect on thyroid function in eel 154:199 (de Luze A, et al)
Prophenoloxidase system, exocytosis of – in crayfish haemocytes 156:175 (Johanssen MW, Söderhäll K)
Prostacylin, effect on eel heart in vitro 160:365 (Acierno R, et al)
Prostaglandins, effects on hagfish blood and urine 158:621 (Wales NAM)
Protein, actin-modulating, from earthworm obliquely striated muscle 157:615 (D'Haese J, Hinssen H)
-, adhesive, of mussel ribbed muscle 159:517 (Waite JH, et al)
-, antifreeze, in beetle larva 151:233 (Horvath KL, Duman JG)
-, binding, of lepidopteran juvenile hormone 154:213 (Wing KD, et al)
- biosynthesis in *Aplysia* atrial gland 154:435 (Kelner KL, et al)
-, calcium-binding, from earthworm body wall muscle 158:325 (Huch R, et al)
- catabolism in fasting geese 157:491 (Robin J-P, et al)
-, egg-specific, in silkworm 158:1 (Indrasith LS, et al)
- function, pH-temperature interactions on – in hamster 158:487 (Malan A, Mioskowski E)
- hypertrophy in cold acclimated fishes 158:185 (Kent J, et al)
-, ice nucleating, from hornet queen 154:79 (Duman JG, et al)
-, ice nucleator, hormonal control in insect larvae 160:51 (Xu L, et al)
- kinase, cGMP-dependent, from silkworm eggs 155:693 (Takahashi SY)
- metabolism in hibernating bat muscle and liver 152:137 (Yacoe ME)
-, pheromone-binding, from silk-moth antenna 160:503 (Raming K, et al)
- phosphorylation in *Neurospora* circadian rhythm 159:695 (Techel D, et al)
-, polyphenolic, in mussel glue 156:491 (Waite JH)
- synthesis during heat-shock in tobacco hornworm 160:349 (Fittinghoff CM, Riddiford LM)
- - during heat-shock in trout fibroblasts 158:457 (Mosser DD, Bols NC)
- -, effect of acclimation temperature on – in trout tissues 157:201 (Simon E)
- transport, axonal, in crab X-organ sinus gland 153:191 (Stuenkel EL)
- turnover in three wallaby species 158:237 (White RG, et al)
Proteins, clotting, see coagulogens
-, heat shock, in locusts 156:813 (Whyard S, et al)
-, iron binding, in tobacco hornworm 158:291 (Huebers HA, et al)
-, lipid storage associated, in pigeon crop milk 154:237 (Horseman ND, Will CL)
-, myofibrillar, in carp 160:23 (Crockford T, Johnston IA)
-, vitellogenin and vitellin from a tick 152:13 (Chinzei Y, et al)
-, vitellogenin synthesis in a tick 155:671 (Chinzei Y, Yano I)
Proton fluxes in fish in acidified natural soft water 154:35, 329 (Höbe H, et al)
- generation by anaerobic metabolism in marine invertebrates 155:1, 13 (Pörtner HO, et al)
Protons, effect on alanine transport by lobster BBMV 156:537 (Ahearn GA, et al)
-, effect on hemoglobins from aquatic amphibia 155:353 (Lima AAB, et al)
-, regulation in lamprey red cells 156:747 (Nikinmaa M)
Protozoa, amino acid transport in *Tetrahymena* 156:891 (Davis JP, Stephens GC)
-, ciliary reversal in *Paramecium* 152 A:385 (Hildebrand E, Dryl S)
-, circadian oscillators, cell cycles and singularities in *Euglena* 155:257 (Malinowski JR, et al)
-, circadian rhythm in *Gonyaulax* RNA 151:207 (Walz B, et al)
-, clock resetting by 80 S inhibitors in *Gonyaulax* 157:85 (Thorey I, et al)
-, heat responses of *Paramecium* 153 A:39 (Hennessey TM, et al)
-, ion transport in *Tetrahymena* 156:883 (Tsoukatos DC, Kapoulas VM)
-, L-glutamic acid binding site on *Paramecium* cilia 158:345 (Preston RR, Usherwood PNR)
-, net flux of amino acids in *Tetrahymena* 152:27 (Davis JP, Stephens GC)
-, phagocytosis and calcium in *Amoeba* 159:287 (Prusch RD, Vedovatti PA)
Psammodes, energetics of substrate communication 157:11 (Lighton JRB)
Psammodromos, metabolic rate 154:311 (Patterson JW, Davies PMC)
Pseudemys, gaze stabilization 153 A:495 (Dieringer N, et al)
-, plasma renin activity 154:287 (Stephens GA, Creekmore JS)
-, renal responses to diuretics 155:387 (Stephens GA, Robertson FM)
Pseudophryne, gas exchange in eggs 157:477 (Seymour RS, Bradford DF)
Pseudopleuronectes, blood viscosity 155:455 (Graham MS, Fletcher GL)
-, renal function adaptation to hypotonic medium 157:21 (Elger E, et al)
-, taurine transport by brush border membrane vesicles 155:185 (King PA, et al)
Pteronotus, single units in inferior colliculus 153 A:67 (Bodenhamer RD, Pollak GD)
Ptiloerection, temperature effects on – in pigeons 154:47 (Saarela, et al)
Ptyodactylus, temperature effects on oxygen consumption 159:1 (AL-Sadoon MK, Abdo NM)
Puffinus, thermoregulation 157:607 (Whittow GC, et al)
Pulmonary artery, vasoactivity of salamander – 155:241 (Malvin GM)
- function, effect of hypoxia in anurans 152:125 (Withers PC, Hillman SS)
- morphometry in crocodiles 159:761 (Perry SF)
- vasculature, neural regulation of – in a snake 159:677 (Donald JA, et al)
Pulmonata, see *Helix*, *Lymnaea*, *Otala*, snails
Purine bases, effects on crayfish haemocyanin oxygen affinity 156:431 (Morris S, et al)
Purinergic modulation of cardiac activity in hypoxic flounder 159:105 (Lennard R, Huddart H)
Pycnogonum, ecdysteroids 156:759 (Bückmann D, et al)
Pygoscelis, convection and thermoregulation 159:313 (Chappell MA, et al)
-, energy requirements of chicks 160:61 (Culik B, et al)
-, ontogeny of thermoregulation and energy metabolism 155:615 (Taylor JRE)
-, thermoregulation and ventilation 157:783 (Chappell MA, Souza SL)
Pyloric pattern generator, crustacean 153 A:17 (Rezer E, Moulins M)
Pyridine receptor, temperature sensitivity in crayfish – 152 A:395 (Hatt H)
Pyruvate kinase from frogs 156:691 (Fournier P, Guderley H)
- - from sturgeon muscle 153:247 (Guderley H, et al)
- - isozymes from cockroach tissues 155:339 (Storey KB)

Pyruvate kinase, kinetics in anoxic worms 160:201 (Michaelidis B, et al)
– –, modification during anaerobiosis in limpet 160:529 (Gaitanaki C, et al)
– –, phosphorylation by protein kinase in anoxia-tolerant whelk 160:309 (Brooks SPJ, Storey KB)
– –, tissue specific isozymes in whelk 155:291 (Plaxton WC, Storey KB)
Python, infrared tectal thresholds 151 A:461 (Cock Buning T de)
–, thermogenic incubation in – 157:393 (Ellis TM, Chappell MA)

Q

Quail, see *Coturnix*

R

Rabbit, see also *Oryctolagus*
–, chloride fluxes in isolated plasma membranes 155:415 (Hannafin JA, Kinne R)
–, circadian activity 151 A:359 (Nuboer JFW, et al)
–, cone systems in the retina 151 A:347 (Nuboer JFW, et al)
–, spectral sensitivity 151 A:353 (Nuboer JFW, Moed PJ)
–, tight junction regulation in colon 160:381 (Hoffmann B, et al)
Radicals, oxygen free, in ageing frog liver 160:655 (López-Torres M, et al)
Radioglucose metabolism in ground squirrels 156:87 (Bintz GL)
Rainbow trout, see *Oncorhynchus*, *Salmo*
Raja, excretion of bile pigments 157:61 (Grossbard ML, et al)
–, exogenous fuel availability and performance by the heart 154:593 (Driedzic WR, Hart T)
–, osmolyte effects on fatty acid oxidation in liver mitochondria 156:845 (Ballantyne JS, Moon TW)
Rana, ageing and oxygen free radicals in liver 160:655 (López-Torres M, et al)
–, auditory habituation 151 A:423 (Megela AL, Capranica RR)
–, calcium paradox in isolated heart 160:113 (Touraki M, Beis I)
–, cardiovascular responses to spinal thermal stimulation 156:611 (Nagai M, Iriki M)
–, contractile performance of sartorius muscle 151:127 (Renaud JM, Stevens ED)
–, cryoprotectant synthesis 156:191 (Storey JM, Storey KB)
–, effects of hemorrhage and hypernatremia 157:807 (Hillman SS, Withers PC)
–, energy metabolism of erythrocytes 155:109 (Kaloyianni-Dimitriades M, Beis I)
–, epithelial mucus 155:89, 97 (Stith BJ)
–, freeze tolerance 155:29 (Storey KB, Storey JM)
–, freezing and glycolysis in liver 157:373 (Storey KB)
–, gaze stabilization 153 A:495 (Dieringer N, et al)
–, glycogen phosphorylase from brain 156:77 (Kamp G, Wegner G)
–, hyperosmolal effects on cardiac muscle 154:325 (Hillman SS)
–, lens membrane permeability 154:333 (Jacob TJC, Duncan G)
–, pulmonary function and metabolism 152:125 (Withers PC, Hillman SS)
–, pyruvate kinase isoenzymes 156:691 (Fournier P, Guderley H)
–, role of adenosine in isolated heart 156:839 (Lazou A, Beis Is)
–, sodium uptake in tadpoles exposed to low pH water 156:649 (Freda J, Dunson WA)
–, temperature and pH effects on muscle LDH 160:105 (Mendiola P, De Costa J)
Rangifer, neck muscles during rutting season 157:45 (Kiessling K-H, et al)
–, oxygen transport in blood 159:655 (Brix O, et al)
Rat, amylase gen-enzyme system 159:237 (Yardley DG)
–, daily cycle of core temperature and oxygen consumption in pups 159:569 (Mumm B, et al)
Ray, see *Platyrhinoidis*
Rectal gland, chloride fluxes in isolated plasma membranes 155:415 (Hannafin JA, Kinne R)
– –, electrolytes and water in dogfish – 155:145 (Kleinzeller A, et al)
– –, osmotic responses of slices of dogfish – 154:561 (Kleinzeller A, Goldstein J)
– –, ouabain-insensitive ion movement and cAMP in shark – 154:139 (Silva P, et al)
Rectum, oxidative metabolism in locust – 151:191 (Chamberlin ME, Phillips JE)
Red cells, adrenergic regulation in eel – during hypercapnia 159:687 (Hyde DA, Perry SF)
Reed frog, see *Hyperolius*
Refeeding, energy reserves of cod during – 156:469 (Black D, Love RM)
Reflex inhibition by stress hormones in *Aplysia* 159:211 (Krontiris-Litowitz JK, et al), 225 (Cooper BF, et al)
Reflex, motor control of crab muscle receptor 153 A:309 (Cannone AJ, Bush BMH)
Reindeer, see *Rangifer*
Renal, see also kidney
– D-glucose transport system in hagfish 154:355 (Flöge J, et al)
– excretion capacity in hydrated desert rodents 157:237 (Baddouri Kh, et al)
– function, adaptation to hypotonic medium in flounder 157:21 (Elger E, et al)
– – of carp after transfer to salt water 154:225 (Elger M, et al)
– handling of solutes in toadfish 157:573 (Wolff NA, et al)
– phosphate transport in turtle 152:117 (Laverty G)
– plasma flow autoregulation in birds 160:663 (Wideman Jr RF)
– responses to diuretics in turtle 155:387 (Stephens GA, Robertson FM)
– – to salt loading in starlings 159:401 (Laverty G, Wideman RF, Jr)
– transport of organic anions in salamander 154:119 (Khalsa BDS, et al)
– tubules, taurine transport in flounder – 155:185 (King PA, et al)
Renilla, FMRamide contractions 157:31 (Anctil M)
–, serotonin modulation of peristalsis 159:49 (Anctil M)
Renin-angiotensin system in turtle 154:287 (Stephens GA, Creekmore JS)
Reproduction, effects of cold, short day and melatonin on vole – 156:741 (Feist DD, Feist CF)
–, effects of energy stores on groundsquirrel – 154:421 (Barnes BM)
–, seasonal, endocrine correlates of – in Ploceidae 156:641 (Dittami JP)
–, thermogenic incubation in pythons 157:393 (Ellis TM, Chappell MA)
Reptilia, acid-base balance in *Dipsosaurus* 154:97 (Bickler PE); 156:853 (Bickler PE)
–, acidosis effects on *Chrysemys* atria 154:38 (Yee Jr HF, Jackson DC)
–, allometry of mitochondria 156:3 (Else PL, Holbert AJ)
–, body temperature and locomotory energetics in *Tupinambis* 155:21 (Bennett AF, John-Alder HB)
–, calcium and phosphorus in *Chelydra* embryos 159:501 (Packard MJ, Packard GC)
–, cardiorespiratory responses in *Elaphe* 152:59 (Lillywhite HB, et al)
–, cardiovascular shunts in *Crocodylus* 157:381 (Grigg GC, Johansen K)
–, circadian organization in *Anolis* 152 A:265 (Underwood H)
–, digestion in herbivourous lizards 156:599 (Karasov WH, et al)
–, gaze stabilization in *Pseudemys* 153 A:495 (Dieringer N, et al)
–, glycogen synthesis from lactate in *Dipsosaurus* muscle 156:277 (Gleeson TT)
–, hormonal regulation of hepatic glycogenolysis in *Amphibolorus* 159:323 (Janssens PA, Giuliano M)
–, infrared tectal thresholds in snakes 151 A:461 (Cock Buning T de)
–, ion transport in sea turtle salt glands 159:609 (Marshall AT)
–, lactate metabolism in *Dipsosaurus* muscle 160:331 (Gleeson TT, Dalessio PM)
–, lung gases and breathing during CO_2 loading in *Tupinambis* 158:591 (Ballam GO, Donaldson LA)
–, maintenance of blood volume in *Elaphe* and *Crotalus* 155:305 (Smits AW, Lillywhite HB)
–, metabolic rate of *Psammodromus* 154:311 (Patterson JW, Davies PMC)
–, oxygen transport in *Chelonia* 154:275 (Wood SC, et al)
–, panting in dehydrated *Dipsosaurus* 156:377 (Dupré RK, Crawford EC)
–, physiology and activity in *Eremias* 154:113 (Bennett AF, et al)
–, plasma renin activity in *Pseudemys* 154:287 (Stephens GA, Creekmore JS)
–, pulmonary morphometry in *Crocodylus* 159:761 (Perry SF)
–, pulmonary vascular innervation in *Elaphe* 159:677 (Donald JA, et al)
–, renal phosphate transport in *Chrysemys* 152:117 (Laverty G)
–, renal responses to diuretics in *Pseudemys* 155:387 (Stephens GA, Robertson FM)
–, respiration, blood circulation and metabo-

lism during swimming in turtles 154:167 (Butler PJ, et al)
- respiration in *Pituophis* 157:307 (Stinner JN)
-, resting metabolic rates in boid snakes 157:227 (Chappell MA, Ellis TM)
-, seasonal variations in *Dipsosaurus* energy metabolism 154:409 (John-Alder HB)
-, secretion by *Chelonia* salt glands 157:821 (Marshall AT, Cooper PD)
-, sodium and water budgets of estuarine *Crocodylus* 155:501 (Taplin LE)
-, sodium chloride transport across *Gallothia* ileum 157:865 (Badia P, et al)
-, substrate effects during incubation on *Chelydra* hatchlings 158:117 (Packard GC, et al)
-, supercooling and freeze-tolerance in *Podarcis* 160:137 (Claussen DL, et al)
-, temperature effects on *Alligator* development 159:183 (Deeming DC, Ferguson MWJ)
-, temperature effects on nocturnal gecko oxygen consumption 159:1 (AL-Sadoon MK, Abdo NM)
-, thermal adaptations in Australian skink muscle function 157:241 (John-Alder HB, Bennett AF)
-, thermal dependence of *Dipsosaurus* muscle contraction 155:541 (Marsh RL, Bennett AF)
-, thermal dependence of locomotion and aerobic capacity in *Heloderma* 151:119 (John-Alder HN, et al)
-, thermogenic incubation in *Python* 157:393 (Ellis TM, Chappell MA)
-, thermoregulatory behavior in iguanid lizards 159:13 (Firth BT, et al)
-, transferrin-receptor interactions in – 157:363 (Lim BC, et al)
-, upper airway CO_2-sensitive receptors in *Tupinambis* 157:483 (Coates EL, Ballam GO)
-, vasopressin effects on intestinal electrolyte transport in *Gallotia* 159:745 (Lorenzo A, et al)
-, ventilatory control in *Chrysemys* 151:145 (Glass ML, et al)
-, water exchange in *Chelydra* eggs 160:317 (Kam Y-C, Ackerman RA)
Respiration, see also gas exchange, ventilation
-, aerial and aquatic, of a tropical gastropod 156:247 (Uma Devi V, et al)
-, bradycardia in diving ducks and cormorants 154:243 (Mangalam HJ, Jones DR)
-, breathing pattern and growth 155:171 (Mortola JP, Noworaj A)
- during swimming in turtles 154:167 (Butler PJ, et al)
-, effect of temperature and altitude on deer mouse – 155:751 (Chappell MA)
-, effects of decreased salinity on salmon – 160:31 (Maxime V, et al)
-, effects of exogenous and endogenous hypercapnia in trout 151:185 (Thomas S, et al)
-, evidence for diffusion lungs in tarantula 157:209 (Paul R, et al)
-, gas exchange and air flow in snake lung 157:307 (Stinner JN)
- in nontorpid mousebirds 157:801 (Prinzinger R)
–, lung gases during CO_2 loading in lizards 158:591 (Ballam GO, Donaldson LA)
- of emersed shore crabs 158:387 (Dejours P, Truchot J-P)
–, oxygen and carbon dioxide transport by crab haemocyanin 157:873 (Morris S, et al)
–, oxygen transport in sea turtle 154:275 (Wood SC, et al)
- patterns of desert beetles 155:155 (Bartholomew GA, et al)
–, regulation of crayfish oxygen consumption 155:43 (Massabuau JC, Burtin B)
–, temperature and hypoxia effects on fowl breathing patterns 156:109 (Brackenbury J, Gleeson M)
–, upper-airway CO_2-sensitive receptors in lizard 157:483 (Coates EL, Ballam GO)
–, ventilatory CO_2 drive in crayfish 154:65 (Massabuau J-C, et al)
–, ventilatory CO_2 reflex in hypoxic crayfish 156:115 (Massabuau JC, Burtin B)
–, ventilatory control in the turtle 151:145 (Glass ML, et al)
Respiratory acidosis in hibernating hamster 156:251 (Malan A, et al)
- enzymes, mitochondrial, in homeothermic and heterothermic endotherms 155:125 (Geiser F, McMurchie EJ)
- evaporation in pigeon 157:253 (Webster MD, King JR)
- movements, avian brainstem regions and generation of – 155:37 (Davey NJ, Seller TJ)
- patterns in a parrot 155:269 (Bucher TL)
- quotients of bees during locomotion 158:729 (Rothe U, Nachtigall W)
- responses of chicken to spinal cooling 155:103 (Barnas GM, et al)
- – of tench to hypoxia – hypercapnia 156:197 (Jensen FB, Weber RE)
Resting potential of molluscan muscle 159:305 (Dorsett DA, Evans CG)
Rete ophthalmicum, role in brain temperature regulation 153:241 (Midtgård U, et al); 157:583 (Burgoon DA, et al)
Reticulocytes, iron uptake by vertebrate – 157:363 (Lim BC, et al)
Retina, afferent and efferent components in *Octopus* – 151A:381 (Patterson JA, Silver SC)
–, cone sytems in rabbit – 151A:347 (Nuboer JFW et al)
–, spectral receptors in dragonfly – 151A:295 (Meinertzhagen IA, et al)
Rhabdom, membrane turnover in a crab 153A:365 (Stowe S)
Rhinolophus, detection of oscillating targets 153A:385 (Schnitzler H-U, Flieger E)
–, echolocation 152A:421 (Vogler B, Neuweiler G)
Rhynchotragus, metabolic effects of temperature and dehydration 152:23 (Kamau JMZ, Maloiy GMO)
Rhyparobia, association of two clotting proteins 158:527 (Ferstl S, et al)
Rhythm, daily, of lizard thermoregulatory behavior 159:13 (Firth BT, et al)
–, semimonthly, of garden warbler body weight 156:859 (Bairlein F)
Rhythmicity, biochronometry of sparrow testicular regression 153A:489 (Moore MC, et al)
–, BX, photoperiod and melatonin in hamster 158:301 (Pieper DR, et al)
–, circadian organization in a lizard 152A:265 (Underwood H)
–, circadian oscillator in *Aplysia* eye 151A:253 (Woolum JC, Strumwasser F)
–, circadian oscillators, cell cycles and singularities in *Euglena* 155:257 (Malinowski JR, et al)
–, circadian pacemaker activity in cockroach 152A:231 (Page TL)
–, circadian rhythm in dinoflagellate RNA 151:207 (Walz B, et al)
–, colour changes as synchronizers of rabbit circadian activity 151A:359 (Nuboer JFW, et al)
–, condionality of clock resetting by 80 S inhibitors in *Gonyaulax* 157:85 (Thorey I, et al)
–, conditioning of *Drosophila* clock mutants 151A:545 (Jackson FR, et al)
–, daily cycle of temperature and oxygen consumption in rat pups 159:569 (Mumm B, et al)
–, daily torpor in hamster 160:609 (Ruf T, et al)
–, effect of photophase on daily torpor in a marsupial 156:129 (Geiser F, Baudinette RV)
–, effects of pinealectomy and melatonin implants on housefinch activity rhythms 153A:413 (Fuchs JL)
–, endogeneous regulation of hen pineal melatonin secretion 158:381 (Sigüenza AF, et al)
–, photoperiod and pineal NAT activity in chicken 159:37 (Binkley S, et al)
–, photoperiodic induction of fleshfly pupal diapause 154:91 (Gnagey AL, Denlinger DL)
–, protein phosphorylation in *Neurospora* circadian rhythm 159:695 (Techel D, et al)
–, role of eyes in *Aplysia* circadian organization 153A:133 (Lickey ME, et al)
–, temperature effects on dormouse annual biological cycles 159:333 (Jallageas M, et al)
–, thyroxine as photoperiodic mimetic in quails 157:829 (Follett BK, et al), 837 (Follett BK, Nicholls TJ)
–, two components of hamster split circadian activity rhythms 153A:123 (Lees JG, et al)
Rhythms, day-night, in opiate modulation of quail body temperature 160:699 (Kavaliers M)
Ring gland activity and JHB_3 biosynthesis in a fly 159:383 (Richard DS, et al)
RNA, circadian rhythm in a dinoflagellate 151:207 (Walz B, et al)
Robber flies, see Asilidae
Rodents, energetics during torpor 159:667 (Snyder GK, Nestler JR)
–, kidney osmolytes of xeric and mesic – 158:369 (Yancey PH)
Root effect in octopus hemocyanin 158:547 (Miller KI, Mangum CP)
Rutilus, swimming activity metabolic rates 160:71 (Forstner H, Wieser W)

S

Saccopteryx, echolocation calls 151 A: 515 (Barclay RMR)
Salamander, see *Ambystoma*, *Necturus*, *Salamandra*
Salamandra, processing of visual stimuly by tectal neurons 153 A: 85 (Finkenstädt T, Ewert J-P)
–, visual pattern discrimination 153 A: 99 (Finkenstädt T, Ewert J-P)
Salinity, decreased, effects on salmon respiration and blood 160: 31 (Maxime V, et al)
– fluctuating, and FAA accumulation in a copepod 158: 99 (Goolish EM, Burton RS)
– stress, β-alanine metabolism during – in a sea anemone 154: 181 (Kasschau MR, et al)
Salmo, ADP-ribosyltransferase 157: 567 (Burtscher HJ, et al)
–, adrenaline and blood oxygen affinity 152: 67 (Nikinmaa M)
–, alkaline phosphatase and osmoregulation 157: 469 (Gasser KW, Kirschner LB)
–, beta-adrenergic control of blood oxygen affinity 157: 667 (Tetens V, Christensen NJ)
–, blood acid-base balance 152: 53 (Thomas S)
–, blood acid-base status and water carbonate alkalinity 156: 29 (Thomas S, Poupin J)
–, branchial chloride transport 154: 269 (Perry SF, et al)
–, carbonic anhydrase activity during hypercapnia 157: 405 (Dimberg K, Höglund LB)
–, disposition of alkaline phosphatase 157: 461 (Gasser KW, Kirschner LB)
–, effect of acclimation temperature on protein synthesis 157: 201 (Simon E)
–, effects of anoxia and $[Ca^{2+}]_0$ on heart muscle 154: 523 (Nielsen KE, Gesser H)
–, effects of copper on branchial ionoregulation 155: 635 (Laurèn DJ, McDonald DG)
–, energy metabolism during swimming 156: 511 (Van den Thillart G)
–, energy production of fry 155: 485 (Wieser W, et al)
–, estradiol effects on ion distribution 155: 347 (Björnsson BT, Haux C)
–, exogenous and endogenous hypercapnia 151: 185 (Thomas S, et al)
–, force frequency in myocardium 159: 61 (Hove-Madsen I, Gesser H)
–, gen transfer to eggs 158: 751 (Rokkones E, et al)
–, gill AMP deaminase 154: 55 (Raffin J-P)
–, gill metabolism 154: 191 (Mommsen TP)
–, gill water boundary layer 158: 627 (Wright PA, et al)
–, gill water chemistry 159: 527, 539 (Playle RC, Wood CM)
–, gustatory responses to amino acids 153 A: 423 (Marui T, et al)
–, hypercapnia and catecholamines 158: 107 (Vermette MG, Perry SF)
–, interactions of surfactants in gills 157: 429 (Stagg RM, Shuttleworth TJ)
–, intestinal amino acid transport 157: 161 (Bell JG, et al)
–, ionic movements across chorion in newly shed eggs 159: 771 (Eddy FB, et al)
–, ionic regulation by eggs 159: 249 (Shephard KL, McWilliams PG)
–, lipid transport 156: 497 (Black D, Skinner R)
–, lysophosphatidylcholine acetyltransferase activity of liver 158: 363 (Livermore RC, Hazel JR)
–, membrane adaptation to temperature changes 156: 35 (Hagar AF, Hazel JR)
–, ouabain binding to hepatocytes 160: 93 (Bianchini L, et al)
–, phospholipase A_2 155: 461 (Neas NP, Hazel JR)
–, phospholipid composition of gill membrane 155: 597 (Hazel JR, Carpenter R)
–, protein synthesis and thermotolerance in fibroblasts 158: 457 (Mosser DD, Bols NC)
–, regulation of intestinal glucose absorption 157: 677 (Buddington RK)
–, respiratory effects of decreased salinity 160: 31 (Maxime V, et al)
–, sodium uptake in intenstine 159: 275 (Aguenaou H, et al)
–, steroids and leucin transport 151: 247 (Habibi H, et al)
–, temperature and phospholipid molecular species in liver tissue membranes 156: 665 (Hazel JR, Zerba E)
–, zinc-induced acid-base, ion and blood gas changes 154: 149 (Spry DJ, Wood CM)
Salmon, see *Oncorhynchus*, *Salmo*
Salmon louse, see *Lepeophtheirus*
Salt gland secretion, blood removal and infusion effects on gull – 157: 261 (Hughes MR)
– –, control by cephalic osmoreceptors in ducks 154: 449 (Gerstberger R, et al)
– –, isosmotic secretion in duck – 156: 213 (Marshall AT, et al)
– –, lachrimal, secretory capacity in hatchling sea turtles 157: 821 (Marshall AT, Cooper PD)
– – stimulation, hypertonic, and osmoregulatory hormones in ducks 158: 9 (Erbe K-H, et al)
– –, x-ray microanalysis of turtle – 159: 609 (Marshall AT)
– glands, responses to AII in Pekin ducks 156: 315 (Gray DA, et al)
– intake and arterial hypotension in ducks 160: 127 (Brummermann M, Simon E)
– load, effects on water conservation in gerbils 160: 413 (Sasidharan TO, et al)
– loading, effects on leech circulation 158: 553 (Hildebrandt J-P, Zerbst-Boroffka I)
– transport by crab gill epithelium 159: 21 (Onken H, Graszynski K)
Salvelinus, seasonal changes in sea-water tolerance 159: 381 (Finstad B, et al)
Sandhopper, see *Talitrus*
Sarcophaga, effects of anoxia on development and metabolism 160: 683 (Kukal O, et al)
–, photoperiodic induction of pupal diapause 154: 91 (Gnagey AL, Denlinger DL)
–, ring gland sensitivity to interspecific prothoracicotropic hormone 156: 767 (Roberts B, Gilbert LI)
Sarcophagidae, responses to cold and heat stress 160: 543 (Chen C-P, et al)
Sartorius muscle, contractile performance in frog and toad 151: 127 (Renaud JM, Stevens ED)
Sauromalus, thermoregulatory behavior 159: 13 (Firth BT, et al)
Scaptotrigona, caste-specific hormone differences 160: 617 (Hartfelder K, Rembold H)
Schistocerca, oxidative metabolism in rectum 151: 191 (Chamberlin ME, Phillips JE)
–, rectal oxygen consumption 153: 223 (Sell D, Houlihan DF)
–, temperature effects on acid-base status 158: 763 (Harrison JM)
Schistosoma, effects on metabolism in snails parasitized by – 156: 563 (Meyer R, et al); 160: 41 (Liebsch M, Becker W)
Scincidae, thermal adaptations in muscle function 157: 241 (John-Alder HB, Bennett AF)
Scorpions, see also *Leiurus*, *Pandinus*, *Typopeltis*
–, function of book lungs 159: 409 (Paul R, et al), 419 (Paul R, Fincke T), 433 (Fincke T, Paul R)
Sculpin, see *Myoxocephalus*
Scyliorhinus, adrenergic blockade and gas exchange 158: 39 (Metcalfe JD, Butler PJ)
Sea anemone, see *Bunodosoma*, *Condylactis*
Sea lion, see *Zalophus*
Sea urchin, see *Strongylocentrotus*
Seabirds, arctic, thermoregulation in – 157: 703 (Gabrielsen GW, et al)
Seal, see also *Halichoerus*, *Leptonychotes*, *Mirounga*, *Phoca*
–, blood viscosity 159: 153 (Wickham LL, et al)
Season, effect on lizard metabolic rate 154: 311 (Patterson JW, Davies PMC)
Seasonal acclimatization in penguin chicks 154: 317 (Barré H)
– adaptation of hamster brown adipose tissue 155: 521 (Rafael J, et al)
– changes in fish sea-water tolerance 159: 37 (Finstad B, et al)
– – in oxygen storage capacity in diving muskrats 160: 593 (MacArthur RA)
– – of hamster intestinal enzyme activities 158: 143 (Galluser M, et al)
– comparisons of ant oxygen consumption rates 154: 399 (MacKay WP, Sassaman CA)
– effects on deer mice aerobic metabolism 159: 453 (Hayes JP)
Seawater adaptation, GH kinetics in trout during – 160: 1 (Sakamoto T, et al)
– –, intestinal Na^+ uptake in trout 159: 275 (Aguenaou H, et al)
– tolerance, seasonal changes in charr – 159: 371 (Finstad B, et al)
Sebastolobus, binding properties of A_1 adenosine receptors 157: 267 (Murray TF, Siebenaller JF)
–, pressure adaptation of dehydrogenases 154: 443 (Siebenaller JF)
Secretion by sea turtle salt glands 157: 821 (Marshall AT, Cooper PD)
–, chloride, effect of adrenergic receptors on – 154: 343 (May SA, et al)
–, isosmotic, in avian salt gland 156: 213 (Marshall AT, et al)
Sensory systems of newt embryos 152 A: 529 (Roberts A, Clarke JDW)
Sepiola, lens membrane permeability 154: 33 (Jacob TJC, Duncan G)

Serotonin, effect on cAMP in *Aplysia* gill 156:57 (Weiss S, et al)
–, modulation of coelenterate peristalsis by – 159:491 (Anctil M)
– N-acetyltransferase, loss of activitiy in chicken pineal gland 159:583 (Rodriguez-Cabello JC, et al)
Sexual condition, effect on lizard metabolic rate 154:311 (Patterson JW, Davies PMC)
– differences in frog metabolism 159:473 (Merkle S)
Shag, see *Phalacrocorax*
Sharks, see also *Raja*, *Scyliorhinus*, *Squalus*, *Triakis*
–, brain and eye temperatures 156:229 (Block BA, Carey FG)
–, lamnid, swimming muscle helps warm the brain of – 157:709 (Wolf NG, et al)
Shearwater, see *Puffinus*
Shivering in fowl aerobic and anaerobic muscles 158:431 (Aulie A, Tøien Ø)
–, temperature effects on – in pigeons 154:47 (Saarela, et al)
Shrew, see *Crocidura*
Shrimp, see *Artemia*, *Crangon*, *Palaemon*, *Palaemonetes*
Silkworm, see *Bombyx*
Sinus gland, peptides in crab – 153:191 (Stuenkel EL)
Sipunculus, anaerobiosis and acid-base status 155:13 (Pörtner HO, et al)
Skate, see *Raja*
Skeletal muscle, see muscle
Skin color, effects on solar heat gain and ultraviolet irradiance 158:213 (Walsberg GE)
– mucus, biochemical examination of frog – 155:89, 97 (Stith BJ)
– permeability, nervous control in toad 154:573 (Segura ET, et al)
Sleep, effect on metabilic rate in a penguin 154:487 (Stahel CD, et al)
Slug, see *Lehmannia*
Sminthopsis, daily torpor 156:129 (Geiser F, Baudinette RV)
Snails, see also *Biomphalaria*, gastropods, *Helix*, *Littorina*, *Otala*
–, pulmonate, anal water uptake 156:291 (Neuckel W)
–, structural analysis of galactans 159:629 (Knels U, Bretting H)
Snakes, see also *Agkistrodon*, *Boa*, *Crotalus*, *Elaphe*, *Pituophis*, *Python*
–, boid, resting metabolic rates 157:227 (Chappell MA, Ellis TM)
Social behavior, effect on hamster daily torpor 160:609 (Ruf T, et al)
– effects on response to cold in shrew juveniles 159:301 (Nagel A)
– thermoregulation in hibernating marmots 158:151 (Arnold W)
Sodium absorption, Ca-sensitive, in frog colon 160:161 (Krattenmacher R, et al)
– balance, effect of food consumption on beetle – 158:91 (Frisbie MP, Dunson WA)
– – in acid tolerant sunfish 157:555 (Gonzalez RJ, Dunson WA)
– budget of estuarine crocodile 155:501 (Taplin LE)
– chloride, effect on hormone release in fowl 156:399 (Arad Z, et al)
– –, effect on oxygen binding by *Artemia* hemoglobin 156:355 (Davis BJ, Riggs AF)
– –, effect on plasma hormones in dehydrated fowl 156:383 (Årnason SS, et al)
– –, effect on water and ion fluxes in hen caecum 159:51 (Thomas DH, Skadhauge E)
– – transport across lizard ileum 157:865 (Badia P, et al)
– concentration and electrical parameters in fowl colon 158:19 (Grubb BR, Bentley PJ)
–, dietary, and glomerular filtration rate in fowl 160:7 (Vena VE, et al)
–, effect on alanine transport by lobster BBMV 156:537 (Ahearn GA, et al)
– excretion rates in salt loaded starling 159:401 (Laverty G, Wideman RF, Jr)
– fluxes in a crab 157:599 (Zanders IP, Martelo M-J)
– free amino-acid transport in sea urchin larvae 156:121 (Davis JP, et al)
– regulation in freshwater amphipod 156:323 (Taylor PM, Harris RR); 160:85 (Harris RR, Bayliss D)
– uptake in tadpoles exposed to low pH water 156:649 (Freda J, Dunson WA)
– – in trout intestinal brush border membrane 159:275 (Aguenaou H, et al)
Solar direction finding in sandhoppers 151A:435 (Pardi L, Scapini F)
– heat gain of squirrel fur and skin 158:213 (Walsberg GE)
Solemya, bacterial symbionts 152:3 (Felbeck H)
Solenopsis, inhibitory pheromone 153A:567 (Fletcher DJC, Blum MS)
Somateria, tissue thermogenesis in ducklings 158:513 (Grav HJ, et al)
Song, pure-tone, in cicadas 152A:197 (Young D, Josephson RK)
– recognition and pattern in a grasshopper 153A:393 (Skovmand O, Pedersen SB)
Sorbitol dehydrogenase in silkworm diapause eggs 160:277 (Yaginuma T, et al)
Sound, low-frequency, response of bushcricket giant interneurons to – 151A:449 (Shen J-X)
– production, echolocation calls of bats 151A:515 (Barclay RMR)
– – in cicadas 152A:183, 197 (Young D, Josephson RK)
– –, precision of call timing in treefrogs 153A:403 (Zelick RD, Narins PM)
– –, song patterns in a grasshopper 153A:393 (Skovmand O, Pedersen SB)
Spalax, hypoxic working of heart 158:575 (Edoute Y, et al)
–, nonshivering thermogenesis 154:145 (Haim A, et al)
Sparrow, see *Passer*, *Zonotrichia*
Speciation, significance of variation in nonshivering thermogenesis on – in mole rats 154:145 (Haim A, et al)
Spectral receptors in dragonfly retina and lamina 151A:295 (Meinertzhagen IA et al)
– sensitivity of rabbit 151A:353 (Nuboer JFW, Moed PJ)
Speophyes, antennal thermal receptors 153A:343 (Corbière-Tichané G, Loftus R)
Spermatophores, trehalase in beetle – 157:765 (Yaginuma T, Happ GM)
Spermophilus, energy stores and reproduction 154:421 (Barnes BM)
–, lipid synthesis and deposition 158:199 (Bintz GL)
–, radioglucose metabolism 156:87 (Bintz GL)
–, seasonal changes in mitochrondrial succinate dehydrogenase activity 154:495 (Pehowich DJ, Wang LCH)
–, skeletal muscle pH during arousal from hibernation 160:339 (McArthur MD, et al)
–, solar heat gain and ultraviolet irradiance effects 158:213 (Walsberg GE)
Spiders, see also Arachnida
–, function of book lungs 159:409 (Paul R, et al), 419 (Paul R, Fincke T), 433 (Fincke T, Paul R)
–, heart rates and locomotion 157:451 (Bromhall C)
Spinal cord, cardiovasuclar responses to thermal stimulation in frogs 156:611 (Nagai M, Iriki M)
– – cooling, responses to – in chickens 155:103 (Barnas GM, et al)
Spiracle function in arachnid book lungs 159:433 (Fincke T, Paul R)
Splanchnic nerve, influence on melatonin action in birds 158:601 (Mahata SK, et al)
Spleen, nerve impulse-induced release of catecholamines from cod – 160:401 (Ehrenström F, Ungell A-L)
Squalus, chloride fluxes in isolated plasma membranes 155:415 (Hannafin JA, Kinne R)
–, cyclic AMP and ouabain-insensitive ion movement in rectal gland 154:139 (Silva P, et al)
–, effect of anisotonic media on rectal gland slices 154:561 (Kleinzeller A, Goldstein J)
–, electrolytes and water in rectal gland slices 155:145 (Kleinzeller A, et al)
–, ion exchange in renal brush border membranes 159:339 (Bevan C, et al)
Squid, see *Loligo*
Starling, see *Onychognathus*, *Sturnus*
Starvation, see also fasting
–, effect on snail keton body metabolism 156:563 (Meyer R, et al)
–, effects on oxygen consumption and nitrogen excretion in a fish 156:701 (Pusey BJ)
–, effects on snail glucose tolerance 160:41 (Liebsch M, Becker W)
–, energy reserves of cod during – 156:469 (Black D, Love RM)
Stellula, brain temperature 157:583 (Burgoon DA, et al)
Sternopygus, effects of steroids on discharge frequency 153A:29 (Meyer JH)
–, plasticity of electroreceptor tuning 153A:477 (Zakon HH, Meyer JH)
Steroids, effects on electric organ discharge frequency 153A:29 (Meyer JH)
Stick insect, see *Carausius*
Stress, effect on newt leukocytes 153A:81 (Bennett MF, Daigle KR)
– hormones in mollusc traumatic body wall 159:211 (Krontiris-Litowitz JK, et al), 225 (Cooper BF, et al)
Stress-like reactions to adverse environmental factors in a fly 157:519 (Rauschenbach IYu, et al)

Strongylocentrotus, sodium dependent amino acid transport 156:121 (Davis JP, et al)
Structure-activity relationships on hyperglycemia by hormones in cockroaches 160:187 (Hayes TK, Keeley LL)
Struthio, microclimate of nests 157:845 (Swart D, Rahn H)
Sturgeon, see *Acipenser*
Sturnus, heat balance 155:395 (Dmi'el R, Tel-Tzur D)
–, renal responses to salt loading 159:401 (Laverty G, Wideman RF, Jr.)
Submergence, see diving
Succinate dehydrogenase, mitochondrial, in a hibernator 154:495 (Pehowich DJ, Wang LCH)
Sucrose gap technique, molluscan muscle function examined by – 158:501 (Huddart H, Hill RB)
Sugar transport in fish intestine 151:163 (Groot JA, et al); 152:79 (Ferraris RP, Ahearn GA)
Sulfide detoxification by fish mitochondira 160:519 (Bagarinao T, Vetter RD)
– systems, adaptation to life in – 158:335 (Morrill AC, et al)
Sunfish, see *Enneacanthus*, *Lepomis*
Supercooling, promotion by removal of ice nucleators in a beetle 156:707 (Neven LG, et al)
–, reactions to – in European wall lizard 160:137 (Claussen DL, et al)
Surfactants, interactions with catecholamines in teleost gill 156:727 (Stagg RM, Shuttleworth TJ); 157:429 (Stagg RM, Shuttleworth TJ)
Swimbladder, catecholamine uptake in teleost – 155:479 (Ungell A-L)
–, gas secretion and resorption in cod – 155:319 (Harden Jones FR, Scholes P)
–, VIP in cod – 154:627 (Lundin K, Holmgren S)
Swimming, cardiac function of shark during – 160:259 (Lai NC, et al)
–, cardiac output and stroke volume in seal during – 160:473 (Ponganis PJ, et al)
–, energy metabolism of trout during – 156:511 (Van den Thillart G)
–, escape, glycogenolysis in shrimp muscle after – 159:753 (Gruschczyk B, Kamp G)
–, metabolic rates of roach during – 160:71 (Forstner H, Wieser W)
–, respiration, blood circulation and metabolism during – in turtles 154:167 (Butler PJ, et al)
–, submerged, effects on physiology of seals 160:627 (Davis RW, et al), 637 (Williams TM, et al)
Sylvia, semimonthly rhythm of body weight 156:859 (Bairlein F)
Symbiosis, animal-bacteria, in a gutless clam 152:3 (Felbeck H)
Sympetrum, ommatidium in the ventral compound eye 151A:285 (Armett-Kibel C, Meinertzhagen IA)
–, spectral receptors in retina and lamina 151A:295 (Meinertzhagen IA et al)
Synapse frequency in bee photoreceptors after chromatic deprivation 151A:477 (Hertel H)
Syntomeida, fate of plant-derived second metabolites in – 160:389 (Wink M, Schneider D)
Syntomis, fate of plant-derived second metabolites in – 160:389 (Wink M, Schneider D)

T

Talitrus, inheritance of solar direction finding 151A:435 (Pardi L, Scapini F)
Tarantula, see *Brachypelma*, *Eurypelma*
Target, oscillating, detection by echolocating bat 153A:385 (Schnitzler H-U, Flieger E)
Tatera, body water relations 158:127 (Goyal SP, et al)
–, water conservation strategies 160:413 (Sasidharan TO, et al)
Taurine transport through fish brush border membrane vesicles 155:185 (King PA, et al); 157:573 (Wolff NA, et al)
Tectal neurons, processing of visual stimuli in salamander – 153A:85 (Finkenstädt T, Ewert J-P)
Tectum, infrared sensitive neurons in snake – 151A:461 (Cock Buning T de)
–, visual responses in fish – 152A:147 (Kawasaki M, Aoki K)
Tegu lizard, see *Tupinambis*
Teleogryllus, auditory directionality 153A:523 (Boyd, Lewis B)
– auditory interneuron sensitive to ultrasound 152A:155 (Moiseff A, Hoy R)
Teleosts, see also Pisces
–, effect of contraction frequency on heart 156:135 (Driedzic WR, Gesser H)
–, pressure adaptation of gill Na^+/K^+-adenosine triphosphatase 160:431 (Gibbs A, Somero GN)
Temperature, see also thermal, thermo-
– acclimation and fish muscle contractile properties 157:219 (Heap SP, et al)
– –, carp myofibrillar proteins during – 160:23 (Crockford T, Johnston IA)
– –, carp myosin ATPase after – 160:233 (Hwang GC, et al)
– –, inverse, in hibernating snails 160:677 (Bailey SER, Lazaridou-Dimitriadou M)
–, ambient, effects on dormouse annual cycles 159:333 (Jallageas M, et al)
–, brain – and rete ophthalmicum in fowl 153:241 (Midgårdt U, et al)
–, brain – in a hummingbird 157:583 (Burgoon DA, et al)
–, cardio-respiratory responses to – in perch 157:771 (Gehrke PC, Fielder DR)
– changes, effects on lactate and lactate dehydronase in shrimp muscle 154:85 (Thébault MT)
–, cold and heat stress in flesh flies 160:543 (Chen C-P, et al)
– dependence of egg laying in *Aplysia* 156:21 (Pinsker HM, Parsons DW)
– effect on crayfish chemoreceptors 152A:395, 405 (Hatt H)
– – on fish myofibrillar protein complex 153:167 (Sidell BD, et al)
– – on kangaroo activity patterns 153:175 (Rübsamen U, et al)
– – on newt leukocytes 153A:81 (Bennett MF, Daigle KR)
– – on phospholipid molecular species in trout liver tissue membranes 156:665 (Hazel JR, Zerba E)
– effects during incubation on hatchling turtles 158:117 (Packard GC, et al)
– – on amphipod haemocyanin oxygen binding 160:195 (Spicer JI, McMahon BR)
– – on anuran muscle LDH 160:105 (Mendiola P, De Costa J)
– – on chick embryo 155:195 (Tazawa H, Nakagawa S)
– – on chuckar ventilation and gas exchange 157:129 (Chappell MA, Bucher TL)
–, – on crab neuromuscular physiology 153A:455 (Stephens PJ, Atwood HL)
– – on crab neuromuscular properties 158:689 (Blundon JA)
– – on deer mouse respiration 155:751 (Chappell MA)
– – on development of alligator embryos 159:183 (Deeming DC, Ferguson MWJ)
– – on fowl breathing patterns 156:109 (Brackenbury J, Gleeson M)
– – on goldfish intestinal transport 151:163 (Groot JA, et al)
– – on intra- and extracellular acid-base status in locusts 158:763 (Harrison JM)
– – on lizard acid-base adjustments 154:97 (Bickler PE)
– – on lizard metabolic rate 154:311 (Patterson JW, Davies PMC)
– – on mealmoth eyes 158:421 (Weyrauther E)
– – on metabolic rates of swimming roach 160:71 (Forstner H, Wieser W)
– – on metabolism in dik-dik antelope 152:23 (Kamau JMZ, Maloiy GMO)
– – on parrot ventilation and metabolism 159:561 (Bucher TL, Morgan KR)
– – on ptilo-erection and shivering in pigeon 154:47 (Saarela, et al)
– – on routine rate of oxygen consumption in larval cyprinids 156:791 (Wieser W, Forstner H)
– – on snake resting metabolic rates 157:227 (Chappell MA, Ellis TM)
– – on sorbitol in silkworm diapause eggs 160:277 (Yaginuma T, et al)
– – on ventilatory control in turtle 151:145 (Glass ML, et al)
–, evolutionary adaptation to – in fish muscle cross bridge mechanisms 156:819 (Altringham JD, Johnstone IA)
–, fly mutant sensitive to developmental – 151A:483 (Minke B)
– modulation of *Aplysia* egg-laying hormone synthesis 154:545 (Berry RW)
– regulation in willow tit 151:109 (Reinertsen RE, Haftorn S)
– tolerance, heat sensitivity in *Manduca* larvae 160:349 (Fittinghoff CM, Riddiford LM)
– transition, acute, effect on fish heart metabolism 160:511 (Sephton D, et al)
Temperature, warm, in shark brain and eye 156:229 (Block BA, Carey FG)
Tench, see *Tinca*
Tenebrio, trehalase in accessory glands and spermatophores 157:765 (Yaginuma T, Happ GM)
Tension transients by stretch in molluscan

skinned smooth muscle 154:187 (Gagelmann M, et al)
Testicular regression timing in sparrows 153 A:489 (Moore MC, et al)
Tetrahymena, amino acid transport 156:891 (Davis JP, Stephens GC)
-, ion transport and regulation 156:883 (Tsoukatos DC, Kapoulas VM)
-, net flux of amino acids 152:27 (Davis JP, Stephens GC)
Tettigonia, cercus-to-giant interneuron system 151 A:449 (Shen J-X)
Tettigoniidae, see bushcricket
Thermal, see also temperature, thermo-
- acclimation, effect on phospholipid composition of trout gill membranes 155:597 (Hazel JR, Carpenter R)
- adaptation, freeze-tolerance in antarctic nematodes 160:167 (Pickup J)
- –, neuroendocrine properties during hamster – 160:153 (Roth J, et al)
- adaptations in lizard muscle function 157:241 (John-Alder HB, Bennett AF)
- conductance changes in penguin chick seasonal acclimatization 154:317 (Barré H)
- dependence of lizard muscle contraction 155:541 (Marsh RL, Bennett AF)
- – of locomotory energetics of the Gila Monster 151:119 (John-Alder HB, et al)
- – of properties of fish skinned muscle fibres 155:63 (Johnstone IA, Brill R)
- receptors in a cave beetle 153 A:343 (Corbière-Tichané G, Loftus R)
- stimulation of spinal cord, cardiovascular responses in frog to – 156:611 (Nagai M, Iriki M)
- stress, response to – in three frog species 154:579 (Beuchat CA, et al)
Thermo-, see also temperature, thermal
Thermodynamics in tench hemoglobin 157:137 (Jensen FB, Weber RE)
Thermogenesis, nonshivering, adaptive physiological variation in mole rat 154:145 (Haim A, et al)
-, –, in bank voles and wood mice 158:157 (Klaus S, et al)
-, oxidative capacity of eider duckling tissues and – 158:513 (Grav HJ, et al)
-, shivering, in fowl aerobic and anaerobic muscles 158:431 (Aulie A, Tøien Ø)
-, shivering/non-shivering, effects on quail – 157:625 (Saarela S, Heldmaier G)
Thermogenic incubation in pythons 157:393 (Ellis TM, Chappell MA)
Thermoreception, cold receptors on beetle antennae 153 A:343 (Corbière-Tichané G, Loftus R)
-, heat responses of *Paramecium* 153 A:39 (Hennessey TM, et al)
-, infrared tectal thresholds in snakes 151 A:461 (Cock Buning T de)
Thermoregulation, allometry of hibernation performance 156:13 (French AR)
- and torpor in a dasyurid marsupial 156:751 (Geiser F)
-, antifreeze polypeptides from a teleost 155:81 (Hew CL, et al)
-, behavior of bees on a feeding place 158:135 (Schmaranzer S, Stabentheiner A)
-, beta-adrenergic control of pigeon cutaneous evaporation 159:97 (Marder J, Raber P)
–, body temperature cycles in hedgehogs 160:299 (Fowler PA, Racey PA)
–, brown adipose tissue in hamster nonshivering thermogenesis 155:717 (Rafael J, et al); 156:237 (Heldmaier G, Buchberger A)
–, CO_2 effects on muskrat – 156:339 (MacArthur RA)
–, cold tolerance in nematodes 154:73 (Wharton DA, et al)
–, cold-acclimation-induced protein hypertrophy in fish 158:185 (Kent J, et al)
–, cryoprotectant synthesis in moth larvae 159:461 (Churchill TA, Storey KB)
–, daily cycle of core temperature in rat pups 159:569 (Mumm B, et al)
–, daily torpor in deermice 154:233 (Tannenbaum MG, Pivorun EB)
–, daily torpor in hamster 160:609 (Ruf T, et al)
–, effect of acclimation temperature on protein synthesis in trout tissues 157:201 (Simon E)
–, effect of dehydration on brain temperature in heat-stressed fowl 154:295 (Arad Z, et al)
–, effect of photoperiod and melatonin on quail – 157:625 (Saarela S, Heldmaier G)
–, effect of surface area to body mass ratio in a marsupial 154:105 (Rübsamen K, et al)
–, effect of temperature and photophase on torpor in a marsupial 156:129 (Geiser F, Baudinette RV)
–, effect of wind on deer mice – 154:619 (Chappell MA, Holsclaw III DS)
–, effects of catecholamines in guinea-pig – 157:855 (Roth J, et al)
–, effects of cold on cation transport in hamster liver cells 154:159 (Horwitz BA, et al)
–, effects of cold, short-day and melatonin on vole – 156:741 (Feist DD, Feist CF)
–, effects of dopamine on goldfish – 159:83 (Wollmuth LP, et al)
–, effects of external factors on hamster hibernation 154:427 (Janský L, et al)
–, energetics during daily torpor and hibernation in rodents 159:667 (Snyder GK, Nestler JR)
–, evaporative water loss in deer mouse and rabbit 155:433 (Conley KE)
–, fever in a leech 159:281 (Cabanac M)
–, foraging profits and thoracic temperature in bees 160:325 (Waddington KD)
–, freeze tolerance in frogs 155:29 (Storey KB, Storey JM)
–, freezing and glycolysis in frog liver 157:373 (Storey KB, et al)
–, glycerol metabolism in freeze-tolerant insect larvae 158:175 (Kukal O, et al)
–, heat balance in starlings from different habitats 155:395 (Dmi'el R, Tel-Tzur D)
–, heat conductance in bee clusters at cool temperatures 156:143 (Southwick EE)
–, heat loss in deer mouse and white rabbit 155:423 (Conley KE, Porter WP)
–, heat shock response in locusts 156:813 (Whyard S, et al)
–, ice nucleating protein from hornet queen 154:79 (Duman JG, et al)
– in a carpenter bee 156:557 (Heinrich B, Buchmann SL)
– in Adelie penguins 157:783 (Chappell MA, Souza SL)
– in antarctic seabirds 159:313 (Chappell MA, et al)
– in bees during flight 158:711 (Jungmann R, et al), 719 (Feller P, Nachtigall W), 729 (Nachtigall W, et al)
– in endotherms 155:711 (Geiser F, McMurchie EJ)
– in four species of arctic seabirds 157:703 (Gabrielsen GW, et al)
– in mousebirds 157:801 (Prinzinger R)
– in rat kangaroo 153:175 (Rübsamen U, et al)
– in robber flies 155:561 (Morgan KR, et al)
– in shearwaters 157:607 (Whittow GC, et al)
–, intracellular pH during daily torpor in deer mice 159:661 (Nestler JR)
–, lipoprotein ice nucleator in insect hemolymph 159:71 (Neven LG, et al); 160:51 (Xu L, et al)
–, membrane adaptation in trout 156:35 (Hagar AF, Hazel JR)
–, metabolic strategies for nocturnal survival in birds 156:635 (Reinertsen RE, Haftorn S)
–, mitochondrial degradation and cryoprotectant synthesis in arctic caterpillars 158:661 (Kukal O, et al)
–, mitochondrial succinate dehydrogenase activity in a hibernator 154:495 (Pehowich DJ, Wang LCH)
–, nest building and brown adipose tissue in house mice 157:39 (Schneider JE, et al)
–, nonshivering thermogenesis in mole rats and significance in speciation 154:145 (Haim A, et al)
– of bee hive 159:551 (Fahrenholz L, et al)
– of flying pigeons 157:111 (Hirth K-D, et al), 117 (Biesel W, Nachtigall W)
–, ontogeny in penguin 155:615 (Taylor JRE)
–, opiate modulation of quail body temperature 160:699 (Kavaliers M)
–, overwintering adaptations in stag beetle 156:707 (Neven LG, et al)
–, plasma free fatty acids during hamster thermogenesis 155:679 (Heldmaier G, Seidl K)
–, poikilothermy and cold tolerance in bird nestlings 159:379 (Steen JB, et al)
–, reduction of metabolism during hibernation and torpor 158:25 (Geiser F)
–, responses of pigeon to changes in inspired air temperature 157:747 (Bech C, et al)
–, responses to heat stress in quails 158:205 (Roberts JR, Baudinette RV)
–, responses to spinal cord cooling in chicken 155:103 (Barnas GM, et al)
–, role of hypothalamo-pituitary-adrenal axis in hedgehog – 155:219 (Werner R, Vens-Cappell F)
–, seasonal adaptation of hamster brown adipose tissue 155:521 (Rafael J, et al)
–, seasonal torpor in dasyurid marsupials 157:335 (Geiser F, Baudinette RV)
–, seasonal variation in ptiloerection and shivering in pigeons 155:47 (Saarela, et al)
–, social, effects on response to cold in shrews 159:301 (Nagel A)

Thermoregulation, social, in hibernating marmots 158:151 (Arnold W)
–, solar heat gain and ultraviolet irradiance effects in squirrels 158:213 (Walsberg GE)
–, sources of heat during nonshivering thermogenesis in hamsters 156:237 (Heldmaier G, Buchberger A)
– strategies in wasps 154:175 (Heinrich B)
–, supercooling and freeze-tolerance in a lizard 160:137 (Claussen DL, et al)
–, susceptibility of mice fat reserves to natural challenges 157:551 (Bronson FH)
–, swimming muscle helps warm shark brain 157:709 (Wolf NG, et al)
–, triggering of cryoprotectant synthesis in frog 156:191 (Storey JM, Storey KB)
Thermoregulatory behavior in two iguanid lizard species 159:13 (Firth BT, et al)
– evaporation in waterproof treefrog 158:643 (Kaul R, Shoemaker VH)
– responses to egg cooling in incubating hens 156:303 (Tøien Ø, et al)
Thermoresistance, embryonic, of medaka inbred strains 160:621 (Kubota Y, Shima A)
Thermotolerance in trout fibroblasts 158:457 (Mosser DD, Bols NC)
Thermotropic behaviour of endotherm mitochondrial respiratory enzymes 155:125 (Geiser F, McMurchie EJ)
Thromboxane, effects on hagfish blood and urine 158:621 (Wales NAM)
Thylogale, energy and protein turnover 158:237 (White RG, et al)
–, urea recycling during water restriction 155:759 (Chilcott MJ, et al)
Thyroid function, prolactin effect on eel – 154:199 (de Luze A, et al)
– hormones, interaction with Harderian glands in hamsters 158:697 (Hoffman RA, et al); 159:293 (Hoffman RA, et al); 160:269 (Hoffman RA, et al)
– –, seasonal variations in lizards 154:409 (John-Alder HB)
Thyroxine, a photoperiodic mimetic in quails 157:829 (Follett BK, et al), 837 (Follett BK, Nicholls TJ)
–, effects of temperature and dehydration in an antelope 152:23 (Kamau JMZ, Maloiy GMO)
Tick, see Acari
Tigriopus, facilitation in free amino acid accumulation 158:99 (Goolish EM, Burton RS)
Tinca, acclimational responses to hypoxia – hypercapnia 156:197, 205 (Jensen FB, Weber RE)
–, allosteric transitions in hemoglobin 157:145 (Weber RE, et al)
–, exercise and adrenergic effects 157:51 (Jensen FB)
–, thermodynamics in hemoglobin 157:137 (Jensen FB, Weber RE)
–, three-state MWC analysis of hemoglobin oxygenation 160:407 (Jensen FB, et al)
Tipula, lipoprotein ice nucleator 159:71 (Neven LG, et al)
Tit, see *Parus*
Toad, see *Bufo*, *Discoglossus*, *Xenopus*
Toadfish, see *Opsanus*
Tobacco budworm, see *Heliothis*
– hornworm, see *Manduca*
Tokking, energetic costs of – in a beetle 157:11 (Lighton JRB)
Torpor, daily, energetics during – in rodents 159:667 (Snyder GK, Nestler JR)
–, –, in hamster 160:609 (Ruf T, et al)
–, –, intracellular pH during – in deer mice 159:661 (Nestler JR)
–, difference in daily patterns among deermice species 154:233 (Tannenbaum MG, Pivorun EB)
–, effect of temperature and photophase on marsupial – 156:129 (Geiser F, Baudinette RV)
–, energy and water balance during – in gerbils 154:535 (Buffenstein R)
– in dasyurid marsupials 156:751 (Geiser F); 157:335 (Geiser F, Baudinette RV)
–, reduction of metabolism during – 158:25 (Geiser F)
Training, effect on oxygen uptake and skeletal muscle in woodmouse 155:51 (Hoppeler H, et al)
Transferrin binding by chick myogenic cells 158:559 (Sorokin LM, Morgan EH)
– endocytosis by chicken erythroid cells 155:201 (Lim BC, Morgan EH)
– -receptor interactions in vertebrates 157:363 (Lim BC, et al)
Trauma factors in mollusc body wall 159:211 (Krontiris-Litowitz JK, et al), 225 (Cooper BF, et al)
Treefrog, see *Chiromantis*, *Eleutherodactylus*, *Hyla*
Trehalase in beetle accessory glands and spermatophores 157:765 (Yaginuma T, Happ GM)
Trehalases from cockroach 155:553 (Ogiso M, et al)
Triakis, cardiac function 160:259 (Lai NC, et al)
Tribolodon, tectal visual responses 152A:147 (Kawasaki M, Aoki K)
Trichechus, heart rates and gas exchange during diving 156:415 (Gallivan GJ, et al)
Trichoplusia, parasite regulation of metamorphosis 155:235, 583, 645 (Jones D)
Trichosorus, digestion and metabolism of eucalypt foliage 157:67 (Foley WJ, Hume ID)
Triiodothyronine, effects of temperature and dehydration in an antelope 152:23 (Kamau JMZ, Maloiy GMO)
Trimethylamine metabolism in fish 158:609 (Charest RP, et al)
Triturus, embryo sensory system 152A:529 (Roberts A, Clarke JDW)
–, motor patterns in embryos 152A:535 (Soffe SR, et al)
Trout, see *Oncorhynchus*, *Salmo*
Tubifex, heat balance study of anaerobiosis 154:587 (Famme P, Knudsen J)
Tupinambis, effect of body temperature on locomotory energetics 155:21 (Bennett AF, John-Alder HB)
–, lung gases and breathing during CO_2 loading 158:591 (Ballam GO, Donaldson LA)
–, upper airway CO_2-sensitive receptors 157:483 (Coates EL, Ballam GO)
Turtle, see *Chelonia*, *Chelydra*, *Chrysemys*, *Pseudemys*
Tymbal muscles, contraction frequencies in cicadas 152A:183 (Young D, Josephson RK)
Tympanal membrane motion necessary for cricket hearing 151A:397 (Kleindienst H-U, et al)
Typopeltis, 2-ketones in defense secretion 157:883 (Haupt J, et al)
Tyrosine hydroxalase activity in crayfish CNS 155:603 (Laxmyr L)

U

Uca, H^+-pump in gills 159:43 (Krippeit-Drews P, et al)
–, role of hormone in color change 154:207 (Herreid II CF, Mooney SM)
–, transepithelial voltage of gills 157:345 (Drews G, Graszynski K)
Ultrafiltration, evidence for – in bivalve mollusc podocytes 156:151 (Meyhöfer E, et al)
Ultraviolet irradiance, effects on squirrel fur and skin 158:213 (Walsberg GE)
Uncoupling, electromechanical, in molluscan muscle 158:501 (Huddart H, Hill RB)
Urea in fasting geese 157:491 (Robin J-P, et al)
– recycling in water-restricted wallabies 155:759 (Chilcott MJ, et al)
–, role in bird nitrogen excretion 155:71 (Mortensen A, Tindall A)
Uric acid, developmental changes of amount in locust epidermis 154:549 (Bouthier A, Lhonoré J)
– – in fasting geese 157:491 (Robin J-P, et al)
Uricolytic enzymatic system in two snails 159:115 (Lazaridou-Dimitriadou M, Kaloyianni M)
Urine composition in burrowed toads 156:735 (Katz U, Gabbay S)
– – in mosquitos 153:257 (Williams JC, et al)
– concentrating ability, development in wallaby pouch young 156:573 (Wilkes GE, Janssens PA)
–, crystalline allantoin in desert rodent – 155:493 (Buffenstein R, et al)
– flow, effects of eicosanoids on – in hagfish 158:621 (Wales NAM)
– – in crayfish during aerial exposure 156:529 (Tyler-Jones R, Taylor EW)
– production, control mechanism for – in toads 159:91 (Petriella S, et al)
Urocolius, metabolism, temperature and breathing 157:801 (Prinzinger R)
Ursus, glycerol metabolism during hibernation 155:75 (Ahlquist DA, et al)

V

Vagal action on toad heart 155:571 (Courtice GP, McCloskey DI)
Vasoactive intestinal polypeptide in cod swimbladder 154:627 (Lundin K, Holmgren S)
Vasodilatation in cooled brood patch 155:703 (Mitgård U, et al)

Vasomotion, arteriolar, effects of central angiotensin II on – in conscious hamsters 159:577 (Rettig R, et al)
Vasopressin, effects on electrolyte transport in lizard intestine 159:745 (Lorenzo A, et al)
–, role in urine concentrating ability in wallaby pouch young 156:573 (Wilkes GE, Janssens PA)
Ventilation, see also gas exchange, respiration
–, aerial, responses to hypoxia and hypercapnia in snake head fish 156:425 (Glass ML, et al)
–, effect of temperature and altitude on deer mouse – 155:751 (Chappell MA)
–, effects of hypercapnia in trout 151:185 (Thomas S, et al)
–, effects of temperature and altitude on chuckar – 157:129 (Chappell MA, Bucher TL)
–, effects of temperature and oxygen on perch – 157:771 (Gehrke PC, Fielder DR)
– in a parrot 155:269 (Bucher TL)
– in Adelie penguins 157:783 (Chappell MA, Souza SL)
– in finches at low and high altitude 158:57 (Clemens DT)
– of octopus during exercise 156:683 (Houlihan DF, et al)
–, response to ambient hypo- and hypercapnia in lugworm 156:797 (Conti E, Toulmond A)
–, responses of crab CPG to changes in O_2 tension 159:29 (Wilkens JL, et al)
–, role of catecholamines in control of trout – 160:441 (Kinkead R, Perry SF)
–, temperature effects on parrot – 159:561 (Bucher TL, Morgan KR)
Ventilatory CO_2 drive in crayfish 154:65 (Massabuau J-C, et al)
– CO_2 reflex in hypoxic crayfish 156:115 (Massabuau JC, Burtin B)
– movements, neural control in an insect 153A:542 (Kinnamon SC, Kammer AE)
– responses and CO_2-sensitive receptors in lizard 157:483 (Coates EL, Ballam GO)
Ventricle, energy metabolism in whelk – 153:159 (Ellington WR)
Vertebrates, amelogonin gene similarity in – 160:469 (Lyngstadaas SR, et al)
–, phylogeny of brain gangliosides 151:215 (Rahmann H, Hilbig R)
–, transferrin-receptor interactions in – 157:363 (Lim BC, et al)
Vespula, ice nucleating protein 154:79 (Duman JG, et al)
–, thermoregulation and foraging 154:175 (Heinrich B)
Vestibular compensation in clawed toad 151A:487 (Rayer B, et al)
Vibrational sensitivity in pigeon 152A:251 (Shen J-X)
– stimuli, effects on spider behavior 152A:347, 361 (Hergenröder R, Barth FG)
VIP, see vasoactive intestinal polypeptide
Vision, afferent and efferent components in *Octopus* retina 151A:381 (Patterson JA, Silver SC)
–, antagonistic color effects in honeybee 151A:441 (Menzel R, Lieke E)
–, cone systems in rabbit retina 151A:347 (Nuboer JFW, et al)
–, crustacean polarisation sensitivity 153A:435 (Stowe S)
–, four spectral types of photoreceptors in butterfly retina 152A:169 (Matić T)
– in stalk-eyed flies 151A:407 (Burkhardt D, Motte I de la)
–, lateral inhibition in *Limulus* eye 152A:517 (Renninger GH)
–, pattern discrimination through neural interactions in salamander brain 153A:99 (Finkenstädt T, Ewert J-P)
–, processing of prey stimuli in salamander tectal neurons 153A:85 (Finkenstädt T, Ewert J-P)
–, properties of snail eye 152A:435 (Hamilton PV, et al)
–, rabbit spectral sensitivity 151A:353 (Nuboer JFW, Moed PJ)
–, spectral receptors in dragonfly retina and lamina 151A:295 (Meinertzhagen IA, et al)
–, spectral sensitivity of pigment migration in moth eye 153A:59 (White RH, et al)
Visual responses in fish optic tectum 152A:147 (Kawasaki M, Aoki K)
Vitamin E in grey seals 159:649 (Schweigert FJ, et al)
Vitellin from a tick 152:13 (Chinzei Y, et al)
Vitelline diverticulum, role in chicken yolk sac resorption 160:645 (Esteban S, et al)
Vitellogenesis, JH and ornithine decarboxylase activity during fly – 160:145 (Birnbaum MJ, Gilbert LI)
Vitellogenin from a tick 152:13 (Chinzei Y, et al)
– synthesis in a tick 155:671 (Chinzei Y, Yano I)
Vocalization, see also sound production
–, energetics of treefrog – 155:163 (Taigen TL, Wells KD)
Vole, see *Clethrionomys*
Volume loading, effects on leech circulation 158:553 (Hildebrandt J-P, Zerbst-Boroffka I)
– regulation in an annelid 154:607 (Dykens JA, Mangum CP)
– – in intertidal Nemertina and Oligochaeta 154:125 (Ferraris JD)

W

Wallaby, see *Macropus*, *Thylogale*
Warbler, see *Sylvia*
Wasp, see *Dolichovespula*, *Vespula*
Water balance, adaptations of reed frog to arid environment 158:537 (Schmuck R, et al)
– – during dehydration in the emu 153:235 (Dawson TJ, et al)
– – during hamster thermal adaptation 160:153 (Roth J, et al)
– – during torpor and hydropenia in gerbils 154:535 (Buffenstein R)
– –, effect of food consumption on beetle – 158:91 (Frisbie MP, Dunson WA)
– –, effect of high fibre diet on rodent – 155:211 (Buffenstein R)
– – in crayfish during aerial exposure 156:529 (Tyler-Jones R, Taylor EW)
– – in desert gerbils 158:127 (Goyal SP, et al)
– – in freshwater amphipod 156:331 (Taylor PM, Harris RR)
– barrier, cuticular, of cockroach 159:739 (Machin J, Lampert GJ)
– boundary layer in fish gill 158:627 (Wright PA, et al)
– budget of estuarine crocodile 155:501 (Taplin LE)
– carbonate alkalinity, effect on crab hemolymph acid-base balance 154:601 (Truchot J-P)
– – –, effects on trout blood acid-base-status 156:29 (Thomas S, Poupin J)
– chemistry in trout gill 159:527, 539 (Playle RC, Wood CM)
– concentration in fasting seal pups 160:537 (Castellini JM, et al)
– conservation in Indian desert gerbils 160:413 (Sasidharan TO, et al)
– –, role of kidney and intestine in sparrow – 158:353 (Goldstein DL, Braun EJ)
– deprivation, effects on gerbil kidney function 160:413 (Sasidharan TO, et al)
– – inducing drinking in quail 158:519 (Takei Y, et al)
– economy, antidiuretic reflex control in toads 159:91 (Petriella S, et al)
– –, effects on bat distribution 156:441 (Bell GP, et al)
– – in bird nests 156:823 (Andersen Ø, Steen JB)
– –, nervous control in toad – 154:573 (Segura ET, et al)
– –, role of crystalline allantoin in desert rodent urine 155:493 (Buffenstein R, et al)
– exchange, effect of incubation media on turtle egg – 160:317 (Kam Y-C, Ackerman RA)
– hardness and copper effects on trout branchial ionoregulation 155:635 (Laurén DJ, McDonald DG)
– homeostasis in flying pigeons 157:117 (Biesel W, Nachtigall W)
– influx, role of catecholamines on – in eel gill 157:327 (Bennett MB, Rankin JC)
– loss, evaporative, in deer mouse and rabbit 155:433 (Conley KE)
– – –, in xeric-adapted frogs 157:423 (Stinner JN, Shoemaker VH)
– permeability of spider cuticle 159:243 (Hadley NF, Quinlan MC)
– –, osmotic, of eel gills 154:1 (Ogasawara T, Hirano T)
– relations in terrestrial idopods 151:155 (Quinlan MC, Hadley NF)
– – of megapodid burried eggs 157:413 (Seymour RS, et al)
– restriction, effects on nitrogen metabolism and urea recycling in wallabies 155:759 (Chilcott MJ, et al)
– retention in burrowed toads 156:735 (Katz U, Gabbay S)
– transport in avian caecum 159:51 (Thomas DH, Skadhauge E)
– – in seawater eel intestine 155:311 (Ando M)
– uptake, anal, in terrestrial pulmonate snails 156:291 (Neuckel W)

Water uptake, paracellular, by slug foot epithelium 156:285 (Uglem GL, et al)
Wax, conversion of scales into combs by African honeybees 156:95 (Kurstjens SP, et al)
Weaning, physiological and metabolic changes in wallaby with – 156:829 (Wilkes GE, Janssens PA)
Whelk, see *Busycon*, *Busycotypus*
Willow ptarmigan, see *Lagopus*
Wind, effect on deer mice thermoregulation and energy balance 154:619 (Chappell MA, Holsclaw III DS)
– tunnel, pigeon flight in – 157:91 (Rothe H-J, Nachtigall W), 99 (Rothe H-J, et al), 111 (Hirth K-D, et al), 117 (Biesel W, Nachtigall W)
Wing stroke frequency, effect of air velocity on fly – 153A:289 (Otzen H, Kuiper JW)
Winter flounder, see *Pseudopleuronectes*
Winter survival of cold hardy beetles 151:225, 233 (Horwath KL, Duman JG)
Woodchuck, see *Marmota*
Woodmouse, see *Apodemus*
Worms, see Annelida

X

Xanthocephalus, mobilization of minerals by embryos 160:649 (Packard MJ, Packard GC)
Xenopus, calcium-sensitive sodium absorption in colon 160:161 (Krattenmacher R, et al)
–, development and vestibular compensation 151A:487 (Rayer B, et al)
–, pertussis toxin blocks melatonin action 157:153 (White BH, et al)
–, sexual differences in metabolism 159:473 (Merkle S)
Xeropicta, uricolytic enzymatic system 159:115 (Lazaridou-Dimitriadou M, Kaloyianni M)
Xylocopa, thermoregulatory physiology 156:557 (Heinrich B, Buchmann SL)

Y

Yolk sac resorption, role of vitelline diverticulum in chicken – 160:645 (Esteban S, et al)
Y-organ, role in crayfish molt 152:91 (Jegla TC, et al)

Z

Zalophus, heart rate and oxygen consumption during swimming 160:637 (Williams TM, et al)
Zinc, effects on trout blood 154:149 (Spry DJ, Wood CM)
Zoarces, embryonic nutrition, growth and energetics 155:437 (Korsgaard B, Østergaard Andersen F)
Zonotrichia, timing of testicular regression 153A:489 (Moore MC, et al)